

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:07:45

INPUT SET: S7068.raw

SEQUENCE LISTING

ENTERED

(1) General Information:

(i) APPLICANT: Artavanis-Tsakonas, S. et al.

(ii) TITLE OF INVENTION: Therapeutic And Diagnostic Methods
And Compositions Based On Notch Proteins And
Nucleic Acids

(iii) NUMBER OF SEQUENCES: 21

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Pennie & Edmonds
(B) STREET: 1155 Avenue of the Americas
(C) CITY: New York
(D) STATE: New York
(E) COUNTRY: U.S.A.
(F) ZIP: 10036

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: 08/083,590
(B) FILING DATE: 25-JUN-1993
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Misrock, S. Leslie
(B) REGISTRATION NUMBER: 18,872
(C) REFERENCE/DOCKET NUMBER: 7326-015

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 212 790-9090
(B) TELEFAX: 212 8698864/9741
(C) TELEX: 66141 PENNIE

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 2892 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: unknown

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:07:51

INPUT SET: S7068.raw

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52      (ii) MOLECULE TYPE: cDNA
53
54
55      (ix) FEATURE:
56          (A) NAME/KEY: CDS
57          (B) LOCATION: 142..2640
58
59
60      (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:
61
62      GAATTCGGAG GAATTATTCA AAACATAAAC ACAATAAACA ATTTGAGTAG TTGCCGCACA      60
63
64      CACACACACA CACAGCCCGT GGATTATTAC ACTAAAAGCG ACACTCAATC CAAAAAATCA      120
65
66      GCAACAAAAA CATCAATAAA C ATG CAT TGG ATT AAA TGT TTA TTA ACA GCA      171
67                      Met His Trp Ile Lys Cys Leu Leu Thr Ala
68                      1                      5                      10
69
70      TTC ATT TGC TTC ACA GTC ATC GTG CAG GTT CAC AGT TCC GGC AGC TTT      219
71      Phe Ile Cys Phe Thr Val Ile Val Gln Val His Ser Ser Gly Ser Phe
72                      15                      20                      25
73
74      GAG TTG CGC CTG AAG TAC TTC AGC AAC GAT CAC GGG CGG GAC AAC GAG      267
75      Glu Leu Arg Leu Lys Tyr Phe Ser Asn Asp His Gly Arg Asp Asn Glu
76                      30                      35                      40
77
78      GGT CGC TGC TGC AGC GGG GAG TCG GAC GGA GCG ACG GGC AAG TGC CTG      315
79      Gly Arg Cys Cys Ser Gly Glu Ser Asp Gly Ala Thr Gly Lys Cys Leu
80                      45                      50                      55
81
82      GGC AGC TGC AAG ACG CGG TTT CGC GTC TGC CTA AAG CAC TAC CAG GCC      363
83      Gly Ser Cys Lys Thr Arg Phe Arg Val Cys Leu Lys His Tyr Gln Ala
84                      60                      65                      70
85
86      ACC ATC GAC ACC ACC TCC CAG TGC ACC TAC GGG GAC GTG ATC ACG CCC      411
87      Thr Ile Asp Thr Thr Ser Gln Cys Thr Tyr Gly Asp Val Ile Thr Pro
88      75                      80                      85                      90
89
90      ATT CTC GGC GAG AAC TCG GTC AAT CTG ACC GAC GCC CAG CGC TTC CAG      459
91      Ile Leu Gly Glu Asn Ser Val Asn Leu Thr Asp Ala Gln Arg Phe Gln
92                      95                      100                      105
93
94      AAC AAG GGC TTC ACG AAT CCC ATC CAG TTC CCC TTC TCG TTC TCA TGG      507
95      Asn Lys Gly Phe Thr Asn Pro Ile Gln Phe Pro Phe Ser Phe Ser Trp
96                      110                      115                      120
97
98      CCG GGT ACC TTC TCG CTG ATC GTC GAG GCC TGG CAT GAT ACG AAC AAT      555
99      Pro Gly Thr Phe Ser Leu Ile Val Glu Ala Trp His Asp Thr Asn Asn
100                      125                      130                      135
101
102      AGC GGC AAT GCG CGA ACC AAC AAG CTC CTC ATC CAG CGA CTC TTG GTG      603

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RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:07:57

INPUT SET: S7068.raw

| | | |
|-----|---|------|
| 103 | Ser Gly Asn Ala Arg Thr Asn Lys Leu Leu Ile Gln Arg Leu Leu Val | |
| 104 | 140 145 150 | |
| 105 | | |
| 106 | CAG CAG GTA CTG GAG GTG TCC TCC GAA TGG AAG ACG AAC AAG TCG GAA | 651 |
| 107 | Gln Gln Val Leu Glu Val Ser Ser Glu Trp Lys Thr Asn Lys Ser Glu | |
| 108 | 155 160 165 170 | |
| 109 | | |
| 110 | TCG CAG TAC ACG TCG CTG GAG TAC GAT TTC CGT GTC ACC TGC GAT CTC | 699 |
| 111 | Ser Gln Tyr Thr Ser Leu Glu Tyr Asp Phe Arg Val Thr Cys Asp Leu | |
| 112 | 175 180 185 | |
| 113 | | |
| 114 | AAC TAC TAC GGA TCC GGC TGT GCC AAG TTC TGC CGG CCC CGC GAC GAT | 747 |
| 115 | Asn Tyr Tyr Gly Ser Gly Cys Ala Lys Phe Cys Arg Pro Arg Asp Asp | |
| 116 | 190 195 200 | |
| 117 | | |
| 118 | TCA TTT GGA CAC TCG ACT TGC TCG GAG ACG GGC GAA ATT ATC TGT TTG | 795 |
| 119 | Ser Phe Gly His Ser Thr Cys Ser Glu Thr Gly Glu Ile Ile Cys Leu | |
| 120 | 205 210 215 | |
| 121 | | |
| 122 | ACC GGA TGG CAG GGC GAT TAC TGT CAC ATA CCC AAA TGC GCC AAA GGC | 843 |
| 123 | Thr Gly Trp Gln Gly Asp Tyr Cys His Ile Pro Lys Cys Ala Lys Gly | |
| 124 | 220 225 230 | |
| 125 | | |
| 126 | TGT GAA CAT GGA CAT TGC GAC AAA CCC AAT CAA TGC GTT TGC CAA CTG | 891 |
| 127 | Cys Glu His Gly His Cys Asp Lys Pro Asn Gln Cys Val Cys Gln Leu | |
| 128 | 235 240 245 250 | |
| 129 | | |
| 130 | GGC TGG AAG GGA GCC TTG TGC AAC GAG TGC GTT CTG GAA CCG AAC TGC | 939 |
| 131 | Gly Trp Lys Gly Ala Leu Cys Asn Glu Cys Val Leu Glu Pro Asn Cys | |
| 132 | 255 260 265 | |
| 133 | | |
| 134 | ATC CAT GGC ACC TGC AAC AAA CCC TGG ACT TGC ATC TGC AAC GAG GGT | 987 |
| 135 | Ile His Gly Thr Cys Asn Lys Pro Trp Thr Cys Ile Cys Asn Glu Gly | |
| 136 | 270 275 280 | |
| 137 | | |
| 138 | TGG GGA GGC TTG TAC TGC AAC CAG GAT CTG AAC TAC TGC ACC AAC CAC | 1035 |
| 139 | Trp Gly Gly Leu Tyr Cys Asn Gln Asp Leu Asn Tyr Cys Thr Asn His | |
| 140 | 285 290 295 | |
| 141 | | |
| 142 | AGA CCC TGC AAG AAT GGC GGA ACC TGC TTC AAC ACC GGC GAG GGA TTG | 1083 |
| 143 | Arg Pro Cys Lys Asn Gly Gly Thr Cys Phe Asn Thr Gly Glu Gly Leu | |
| 144 | 300 305 310 | |
| 145 | | |
| 146 | TAC ACA TGC AAA TGC GCT CCA GGA TAC AGT GGT GAT GAT TGC GAA AAT | 1131 |
| 147 | Tyr Thr Cys Lys Cys Ala Pro Gly Tyr Ser Gly Asp Asp Cys Glu Asn | |
| 148 | 315 320 325 330 | |
| 149 | | |
| 150 | GAG ATC TAC TCC TGC GAT GCC GAT GTC AAT CCC TGC CAG AAT GGT GGT | 1179 |
| 151 | Glu Ile Tyr Ser Cys Asp Ala Asp Val Asn Pro Cys Gln Asn Gly Gly | |
| 152 | 335 340 345 | |
| 153 | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:08:04

INPUT SET: S7068.raw

| | | |
|-----|---|------|
| 154 | ACC TGC ATC GAT GAG CCG CAC ACA AAA ACC GGC TAC AAG TGT CAT TGC | 1227 |
| 155 | Thr Cys Ile Asp Glu Pro His Thr Lys Thr Gly Tyr Lys Cys His Cys | |
| 156 | 350 355 360 | |
| 157 | | |
| 158 | GCC AAC GGC TGG AGC GGA AAG ATG TGC GAG GAG AAA GTG CTC ACG TGT | 1275 |
| 159 | Ala Asn Gly Trp Ser Gly Lys Met Cys Glu Glu Lys Val Leu Thr Cys | |
| 160 | 365 370 375 | |
| 161 | | |
| 162 | TCG GAC AAA CCC TGT CAT CAG GGA ATC TGC CGC AAC GTT CGT CCT GGC | 1323 |
| 163 | Ser Asp Lys Pro Cys His Gln Gly Ile Cys Arg Asn Val Arg Pro Gly | |
| 164 | 380 385 390 | |
| 165 | | |
| 166 | TTG GGA AGC AAG GGT CAG GGC TAC CAG TGC GAA TGT CCC ATT GGC TAC | 1371 |
| 167 | Leu Gly Ser Lys Gly Gln Gly Tyr Gln Cys Glu Cys Pro Ile Gly Tyr | |
| 168 | 395 400 405 410 | |
| 169 | | |
| 170 | AGC GGA CCC AAC TGC GAT CTC CAG CTG GAC AAC TGC AGT CCG AAT CCA | 1419 |
| 171 | Ser Gly Pro Asn Cys Asp Leu Gln Leu Asp Asn Cys Ser Pro Asn Pro | |
| 172 | 415 420 425 | |
| 173 | | |
| 174 | TGC ATA AAC GGT GGA AGC TGT CAG CCG AGC GGA AAG TGT ATT TGC CCA | 1467 |
| 175 | Cys Ile Asn Gly Gly Ser Cys Gln Pro Ser Gly Lys Cys Ile Cys Pro | |
| 176 | 430 435 440 | |
| 177 | | |
| 178 | GCG GGA TTT TCG GGA ACG AGA TGC GAG ACC AAC ATT GAC GAT TGT CTT | 1515 |
| 179 | Ala Gly Phe Ser Gly Thr Arg Cys Glu Thr Asn Ile Asp Asp Cys Leu | |
| 180 | 445 450 455 | |
| 181 | | |
| 182 | GGC CAC CAG TGC GAG AAC GGA GGC ACC TGC ATA GAT ATG GTC AAC CAA | 1563 |
| 183 | Gly His Gln Cys Glu Asn Gly Gly Thr Cys Ile Asp Met Val Asn Gln | |
| 184 | 460 465 470 | |
| 185 | | |
| 186 | TAT CGC TGC CAA TGC GTT CCC GGT TTC CAT GGC ACC CAC TGT AGT AGC | 1611 |
| 187 | Tyr Arg Cys Gln Cys Val Pro Gly Phe His Gly Thr His Cys Ser Ser | |
| 188 | 475 480 485 490 | |
| 189 | | |
| 190 | AAA GTT GAC TTG TGC CTC ATC AGA CCG TGT GCC AAT GGA GGA ACC TGC | 1659 |
| 191 | Lys Val Asp Leu Cys Leu Ile Arg Pro Cys Ala Asn Gly Gly Thr Cys | |
| 192 | 495 500 505 | |
| 193 | | |
| 194 | TTG AAT CTC AAC AAC GAT TAC CAG TGC ACC TGT CGT GCG GGA TTT ACT | 1707 |
| 195 | Leu Asn Leu Asn Asn Asp Tyr Gln Cys Thr Cys Arg Ala Gly Phe Thr | |
| 196 | 510 515 520 | |
| 197 | | |
| 198 | GGC AAG GAT TGC TCT GTG GAC ATC GAT GAG TGC AGC AGT GGA CCC TGT | 1755 |
| 199 | Gly Lys Asp Cys Ser Val Asp Ile Asp Glu Cys Ser Ser Gly Pro Cys | |
| 200 | 525 530 535 | |
| 201 | | |
| 202 | CAT AAC GGC GGC ACT TGC ATG AAC CGC GTC AAT TCG TTC GAA TGC GTG | 1803 |
| 203 | His Asn Gly Gly Thr Cys Met Asn Arg Val Asn Ser Phe Glu Cys Val | |
| 204 | 540 545 550 | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:08:11

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|--|------|
| 205 | | | | | | | | | | | | | | | | | | | |
| 206 | TGT | GCC | AAT | GGT | TTC | AGG | GGC | AAG | CAG | TGC | GAT | GAG | GAG | TCC | TAC | GAT | | | 1851 |
| 207 | Cys | Ala | Asn | Gly | Phe | Arg | Gly | Lys | Gln | Cys | Asp | Glu | Glu | Ser | Tyr | Asp | | | |
| 208 | 555 | | | | | 560 | | | | | 565 | | | | | 570 | | | |
| 209 | | | | | | | | | | | | | | | | | | | |
| 210 | TCG | GTG | ACC | TTC | GAT | GCC | CAC | CAA | TAT | GGA | GCG | ACC | ACA | CAA | GCG | AGA | | | 1899 |
| 211 | Ser | Val | Thr | Phe | Asp | Ala | His | Gln | Tyr | Gly | Ala | Thr | Thr | Gln | Ala | Arg | | | |
| 212 | | | | | 575 | | | | | 580 | | | | | 585 | | | | |
| 213 | | | | | | | | | | | | | | | | | | | |
| 214 | GCC | GAT | GGT | TTG | ACC | AAT | GCC | CAG | GTA | GTC | CTA | ATT | GCT | GTT | TTC | TCC | | | 1947 |
| 215 | Ala | Asp | Gly | Leu | Thr | Asn | Ala | Gln | Val | Val | Leu | Ile | Ala | Val | Phe | Ser | | | |
| 216 | | | | 590 | | | | 595 | | | | | 600 | | | | | | |
| 217 | | | | | | | | | | | | | | | | | | | |
| 218 | GTT | GCG | ATG | CCT | TTG | GTG | GCG | GTT | ATT | GCG | GCG | TGC | GTG | GTC | TTC | TGC | | | 1995 |
| 219 | Val | Ala | Met | Pro | Leu | Val | Ala | Val | Ile | Ala | Ala | Cys | Val | Val | Phe | Cys | | | |
| 220 | | | 605 | | | | | 610 | | | | | 615 | | | | | | |
| 221 | | | | | | | | | | | | | | | | | | | |
| 222 | ATG | AAG | CGC | AAG | CGT | AAG | CGT | GCT | CAG | GAA | AAG | GAC | GAC | GCG | GAG | GCC | | | 2043 |
| 223 | Met | Lys | Arg | Lys | Arg | Lys | Arg | Ala | Gln | Glu | Lys | Asp | Asp | Ala | Glu | Ala | | | |
| 224 | | | 620 | | | | 625 | | | | | 630 | | | | | | | |
| 225 | | | | | | | | | | | | | | | | | | | |
| 226 | AGG | AAG | CAG | AAC | GAA | CAG | AAT | GCG | GTG | GCC | ACA | ATG | CAT | CAC | AAT | GGC | | | 2091 |
| 227 | Arg | Lys | Gln | Asn | Glu | Gln | Asn | Ala | Val | Ala | Thr | Met | His | His | Asn | Gly | | | |
| 228 | 635 | | | | | 640 | | | | | 645 | | | | | 650 | | | |
| 229 | | | | | | | | | | | | | | | | | | | |
| 230 | AGT | GGG | GTG | GGT | GTA | GCT | TTG | GCT | TCA | GCC | TCT | CTG | GGC | GGC | AAA | ACT | | | 2139 |
| 231 | Ser | Gly | Val | Gly | Val | Ala | Leu | Ala | Ser | Ala | Ser | Leu | Gly | Gly | Lys | Thr | | | |
| 232 | | | | | 655 | | | | | 660 | | | | | 665 | | | | |
| 233 | | | | | | | | | | | | | | | | | | | |
| 234 | GGC | AGC | AAC | AGC | GGT | CTC | ACC | TTC | GAT | GGC | GGC | AAC | CCG | AAT | ATC | ATC | | | 2187 |
| 235 | Gly | Ser | Asn | Ser | Gly | Leu | Thr | Phe | Asp | Gly | Gly | Asn | Pro | Asn | Ile | Ile | | | |
| 236 | | | | 670 | | | | | 675 | | | | | 680 | | | | | |
| 237 | | | | | | | | | | | | | | | | | | | |
| 238 | AAA | AAC | ACC | TGG | GAC | AAG | TCG | GTC | AAC | AAC | ATT | TGT | GCC | TCA | GCA | GCA | | | 2235 |
| 239 | Lys | Asn | Thr | Trp | Asp | Lys | Ser | Val | Asn | Asn | Ile | Cys | Ala | Ser | Ala | Ala | | | |
| 240 | | | 685 | | | | | 690 | | | | | 695 | | | | | | |
| 241 | | | | | | | | | | | | | | | | | | | |
| 242 | GCA | GCG | GCG | GCG | GCG | GCA | GCA | GCG | GCG | GAC | GAG | TGT | CTC | ATG | TAC | GGC | | | 2283 |
| 243 | Ala | Ala | Ala | Ala | Ala | Ala | Ala | Ala | Ala | Asp | Glu | Cys | Leu | Met | Tyr | Gly | | | |
| 244 | | | 700 | | | | | 705 | | | | 710 | | | | | | | |
| 245 | | | | | | | | | | | | | | | | | | | |
| 246 | GGA | TAT | GTG | GCC | TCG | GTG | GCG | GAT | AAC | AAC | AAT | GCC | AAC | TCA | GAC | TTT | | | 2331 |
| 247 | Gly | Tyr | Val | Ala | Ser | Val | Ala | Asp | Asn | Asn | Asn | Ala | Asn | Ser | Asp | Phe | | | |
| 248 | 715 | | | | | 720 | | | | | 725 | | | | | 730 | | | |
| 249 | | | | | | | | | | | | | | | | | | | |
| 250 | TGT | GTG | GCT | CCG | CTA | CAA | AGA | GCC | AAG | TCG | CAA | AAG | CAA | CTC | AAC | ACC | | | 2379 |
| 251 | Cys | Val | Ala | Pro | Leu | Gln | Arg | Ala | Lys | Ser | Gln | Lys | Gln | Leu | Asn | Thr | | | |
| 252 | | | | | 735 | | | | | 740 | | | | | 745 | | | | |
| 253 | | | | | | | | | | | | | | | | | | | |
| 254 | GAT | CCC | ACG | CTC | ATG | CAC | CGC | GGT | TCG | CCG | GCA | GGC | AGC | TCA | GCC | AAG | | | 2427 |
| 255 | Asp | Pro | Thr | Leu | Met | His | Arg | Gly | Ser | Pro | Ala | Gly | Ser | Ser | Ala | Lys | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:08:17

INPUT SET: S7068.raw

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256          750          755          760
257
258 GGA GCG TCT GGC GGA GGA CCG GGA GCG GCG GAG GGC AAG AGG ATC TCT      2475
259 Gly Ala Ser Gly Gly Gly Pro Gly Ala Ala Glu Gly Lys Arg Ile Ser
260          765          770          775
261
262 GTT TTA GGC GAG GGT TCC TAC TGT AGC CAG CGT TGG CCC TCG TTG GCG      2523
263 Val Leu Gly Glu Gly Ser Tyr Cys Ser Gln Arg Trp Pro Ser Leu Ala
264          780          785          790
265
266 GCG GCG GGA GTG GCC GGA GCC TGT TCA TCC CAG CTA ATG GCT GCA GCT      2571
267 Ala Ala Gly Val Ala Gly Ala Cys Ser Ser Gln Leu Met Ala Ala Ala
268 795          800          805          810
269
270 TCG GCA GCG GGC AGC GGA GCG GGG ACG GCG CAA CAG CAG CGA TCC GTG      2619
271 Ser Ala Ala Gly Ser Gly Ala Gly Thr Ala Gln Gln Gln Arg Ser Val
272          815          820          825
273
274 GTC TGC GGC ACT CCG CAT ATG TAACTCCAAA AATCCGGAAG GGCTCCTGGT      2670
275 Val Cys Gly Thr Pro His Met
276          830
277
278 AAATCCGGAG AAATCCGCAT GGAGGAGCTG ACAGCACATA CACAAAGAAA AGACTGGGTT      2730
279
280 GGGTTCAAAA TGTGAGAGAG ACGCCAAAAT GTTGTGTGTTG ATTGAAGCAG TTTAGTCGTC      2790
281
282 ACGAAAAATG AAAAATCTGT AACAGGCATA ACTCGTAAAC TCCCTAAAAA ATTTGTATAG      2850
283
284 TAATTAGCAA AGCTGTGACC CAGCCGTTTC GATCCCGAAT TC      2892
285
286
287 (2) INFORMATION FOR SEQ ID NO:2:
288
289 (i) SEQUENCE CHARACTERISTICS:
290 (A) LENGTH: 833 amino acids
291 (B) TYPE: amino acid
292 (D) TOPOLOGY: unknown
293
294 (ii) MOLECULE TYPE: protein
295
296 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:
297
298 Met His Trp Ile Lys Cys Leu Leu Thr Ala Phe Ile Cys Phe Thr Val
299 1          5          10          15
300
301 Ile Val Gln Val His Ser Ser Gly Ser Phe Glu Leu Arg Leu Lys Tyr
302          20          25          30
303
304 Phe Ser Asn Asp His Gly Arg Asp Asn Glu Gly Arg Cys Cys Ser Gly
305          35          40          45
306

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RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:08:23

INPUT SET: S7068.raw

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307  Glu Ser Asp Gly Ala Thr Gly Lys Cys Leu Gly Ser Cys Lys Thr Arg
308      50                      55                      60
309
310  Phe Arg Val Cys Leu Lys His Tyr Gln Ala Thr Ile Asp Thr Thr Ser
311      65                      70                      75                      80
312
313  Gln Cys Thr Tyr Gly Asp Val Ile Thr Pro Ile Leu Gly Glu Asn Ser
314      85                      90                      95
315
316  Val Asn Leu Thr Asp Ala Gln Arg Phe Gln Asn Lys Gly Phe Thr Asn
317      100                     105                     110
318
319  Pro Ile Gln Phe Pro Phe Ser Phe Ser Trp Pro Gly Thr Phe Ser Leu
320      115                     120                     125
321
322  Ile Val Glu Ala Trp His Asp Thr Asn Asn Ser Gly Asn Ala Arg Thr
323      130                     135                     140
324
325  Asn Lys Leu Leu Ile Gln Arg Leu Leu Val Gln Gln Val Leu Glu Val
326      145                     150                     155                     160
327
328  Ser Ser Glu Trp Lys Thr Asn Lys Ser Glu Ser Gln Tyr Thr Ser Leu
329      165                     170                     175
330
331  Glu Tyr Asp Phe Arg Val Thr Cys Asp Leu Asn Tyr Tyr Gly Ser Gly
332      180                     185                     190
333
334  Cys Ala Lys Phe Cys Arg Pro Arg Asp Asp Ser Phe Gly His Ser Thr
335      195                     200                     205
336
337  Cys Ser Glu Thr Gly Glu Ile Ile Cys Leu Thr Gly Trp Gln Gly Asp
338      210                     215                     220
339
340  Tyr Cys His Ile Pro Lys Cys Ala Lys Gly Cys Glu His Gly His Cys
341      225                     230                     235                     240
342
343  Asp Lys Pro Asn Gln Cys Val Cys Gln Leu Gly Trp Lys Gly Ala Leu
344      245                     250                     255
345
346  Cys Asn Glu Cys Val Leu Glu Pro Asn Cys Ile His Gly Thr Cys Asn
347      260                     265                     270
348
349  Lys Pro Trp Thr Cys Ile Cys Asn Glu Gly Trp Gly Gly Leu Tyr Cys
350      275                     280                     285
351
352  Asn Gln Asp Leu Asn Tyr Cys Thr Asn His Arg Pro Cys Lys Asn Gly
353      290                     295                     300
354
355  Gly Thr Cys Phe Asn Thr Gly Glu Gly Leu Tyr Thr Cys Lys Cys Ala
356      305                     310                     315                     320
357

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RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:08:29

INPUT SET: S7068.raw

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358 Pro Gly Tyr Ser Gly Asp Asp Cys Glu Asn Glu Ile Tyr Ser Cys Asp
359           325           330           335
360
361 Ala Asp Val Asn Pro Cys Gln Asn Gly Gly Thr Cys Ile Asp Glu Pro
362           340           345           350
363
364 His Thr Lys Thr Gly Tyr Lys Cys His Cys Ala Asn Gly Trp Ser Gly
365           355           360           365
366
367 Lys Met Cys Glu Glu Lys Val Leu Thr Cys Ser Asp Lys Pro Cys His
368           370           375           380
369
370 Gln Gly Ile Cys Arg Asn Val Arg Pro Gly Leu Gly Ser Lys Gly Gln
371           385           390           395           400
372
373 Gly Tyr Gln Cys Glu Cys Pro Ile Gly Tyr Ser Gly Pro Asn Cys Asp
374           405           410           415
375
376 Leu Gln Leu Asp Asn Cys Ser Pro Asn Pro Cys Ile Asn Gly Gly Ser
377           420           425           430
378
379 Cys Gln Pro Ser Gly Lys Cys Ile Cys Pro Ala Gly Phe Ser Gly Thr
380           435           440           445
381
382 Arg Cys Glu Thr Asn Ile Asp Asp Cys Leu Gly His Gln Cys Glu Asn
383           450           455           460
384
385 Gly Gly Thr Cys Ile Asp Met Val Asn Gln Tyr Arg Cys Gln Cys Val
386           465           470           475           480
387
388 Pro Gly Phe His Gly Thr His Cys Ser Ser Lys Val Asp Leu Cys Leu
389           485           490           495
390
391 Ile Arg Pro Cys Ala Asn Gly Gly Thr Cys Leu Asn Leu Asn Asn Asp
392           500           505           510
393
394 Tyr Gln Cys Thr Cys Arg Ala Gly Phe Thr Gly Lys Asp Cys Ser Val
395           515           520           525
396
397 Asp Ile Asp Glu Cys Ser Ser Gly Pro Cys His Asn Gly Gly Thr Cys
398           530           535           540
399
400 Met Asn Arg Val Asn Ser Phe Glu Cys Val Cys Ala Asn Gly Phe Arg
401           545           550           555           560
402
403 Gly Lys Gln Cys Asp Glu Glu Ser Tyr Asp Ser Val Thr Phe Asp Ala
404           565           570           575
405
406 His Gln Tyr Gly Ala Thr Thr Gln Ala Arg Ala Asp Gly Leu Thr Asn
407           580           585           590
408

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RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:08:36

INPUT SET: S7068.raw

409 Ala Gln Val Val Leu Ile Ala Val Phe Ser Val Ala Met Pro Leu Val
410 595 600 605
411
412 Ala Val Ile Ala Ala Cys Val Val Phe Cys Met Lys Arg Lys Arg Lys
413 610 615 620
414
415 Arg Ala Gln Glu Lys Asp Asp Ala Glu Ala Arg Lys Gln Asn Glu Gln
416 625 630 635 640
417
418 Asn Ala Val Ala Thr Met His His Asn Gly Ser Gly Val Gly Val Ala
419 645 650 655
420
421 Leu Ala Ser Ala Ser Leu Gly Gly Lys Thr Gly Ser Asn Ser Gly Leu
422 660 665 670
423
424 Thr Phe Asp Gly Gly Asn Pro Asn Ile Ile Lys Asn Thr Trp Asp Lys
425 675 680 685
426
427 Ser Val Asn Asn Ile Cys Ala Ser Ala Ala Ala Ala Ala Ala Ala
428 690 695 700
429
430 Ala Ala Ala Asp Glu Cys Leu Met Tyr Gly Gly Tyr Val Ala Ser Val
431 705 710 715 720
432
433 Ala Asp Asn Asn Asn Ala Asn Ser Asp Phe Cys Val Ala Pro Leu Gln
434 725 730 735
435
436 Arg Ala Lys Ser Gln Lys Gln Leu Asn Thr Asp Pro Thr Leu Met His
437 740 745 750
438
439 Arg Gly Ser Pro Ala Gly Ser Ser Ala Lys Gly Ala Ser Gly Gly Gly
440 755 760 765
441
442 Pro Gly Ala Ala Glu Gly Lys Arg Ile Ser Val Leu Gly Glu Gly Ser
443 770 775 780
444
445 Tyr Cys Ser Gln Arg Trp Pro Ser Leu Ala Ala Ala Gly Val Ala Gly
446 785 790 795 800
447
448 Ala Cys Ser Ser Gln Leu Met Ala Ala Ala Ser Ala Ala Gly Ser Gly
449 805 810 815
450
451 Ala Gly Thr Ala Gln Gln Gln Arg Ser Val Val Cys Gly Thr Pro His
452 820 825 830
453
454 Met
455
456
457 (2) INFORMATION FOR SEQ ID NO:3:
458
459 (i) SEQUENCE CHARACTERISTICS:

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:08:42

INPUT SET: S7068.raw

460 (A) LENGTH: 1320 base pairs
461 (B) TYPE: nucleic acid
462 (C) STRANDEDNESS: double
463 (D) TOPOLOGY: unknown
464
465 (ii) MOLECULE TYPE: cDNA
466
467
468 (ix) FEATURE:
469 (A) NAME/KEY: CDS
470 (B) LOCATION: 442..1320
471
472
473
474 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:
475
476 CCGAGTCGAG CGCCGTGCTT CGAGCGGTGA TGAGCCCCTT TTCTGTCAAC GCTAAAGATC 60
477
478 TACAAAACAT CAGCGCCTAT CAAGTGGAAG TGTCAAGTGT GAACAAAACA AAAACGAGAG 120
479
480 AAGCACATAC TAAGGTCCAT ATAAATAATA AATAATAATT GTGTGTGATA ACAACATTAT 180
481
482 CCAAACAAAA CCAAACAAAA CGAAGGCAAA GTGGAGAAAA TGATACAGCA TCCAGAGTAC 240
483
484 GGCCGTTATT CAGCTATCCA GAGCAAGTGT AGTGTGGCAA AATAGAAACA AACAAAGGCA 300
485
486 CCAAATCTG CATACTGGG CTAATTAAGG CTGCCCAGCG AATTTACATT TGTGTGGTGC 360
487
488 CAATCCAGAG TGAATCCGAA ACAAACTCCA TCTAGATCGC CAACCAGCAT CACGCTCGCA 420
489
490 AACGCCCCCA GAATGTACAA A ATG TTT AGG AAA CAT TTT CGG CGA AAA CCA 471
491 Met Phe Arg Lys His Phe Arg Arg Lys Pro
492 1 5 10
493
494 GCT ACG TCG TCG TCG TTG GAG TCA ACA ATA GAA TCA GCA GAC AGC CTG 519
495 Ala Thr Ser Ser Ser Leu Glu Ser Thr Ile Glu Ser Ala Asp Ser Leu
496 15 20 25
497
498 GGA ATG TCC AAG AAG ACG GCG ACA AAA AGG CAG CGT CCG AGG CAT CGG 567
499 Gly Met Ser Lys Lys Thr Ala Thr Lys Arg Gln Arg Pro Arg His Arg
500 30 35 40
501
502 GTA CCC AAA ATC GCG ACC CTG CCA TCG ACG ATC CGC GAT TGT CGA TCA 615
503 Val Pro Lys Ile Ala Thr Leu Pro Ser Thr Ile Arg Asp Cys Arg Ser
504 45 50 55
505
506 TTA AAG TCT GCC TGC AAC TTA ATT GCT TTA ATT TTA ATA CTG TTA GTC 663
507 Leu Lys Ser Ala Cys Asn Leu Ile Ala Leu Ile Leu Ile Leu Leu Val
508 60 65 70
509
510 CAT AAG ATA TCC GCA GCT GGT AAC TTC GAG CTG GAA ATA TTA GAA ATC 711

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 511 | His | Lys | Ile | Ser | Ala | Ala | Gly | Asn | Phe | Glu | Leu | Glu | Ile | Leu | Glu | Ile | |
| 512 | 75 | | | | | 80 | | | | | 85 | | | | | 90 | |
| 513 | | | | | | | | | | | | | | | | | |
| 514 | TCA | AAT | ACC | AAC | AGC | CAT | CTA | CTC | AAC | GGC | TAT | TGC | TGC | GGC | ATG | CCA | 759 |
| 515 | Ser | Asn | Thr | Asn | Ser | His | Leu | Leu | Asn | Gly | Tyr | Cys | Cys | Gly | Met | Pro | |
| 516 | | | | | 95 | | | | | 100 | | | | | 105 | | |
| 517 | | | | | | | | | | | | | | | | | |
| 518 | GCG | GAA | CTT | AGG | GCC | ACC | AAG | ACG | ATA | GGC | TGC | TCG | CCA | TGC | ACG | ACG | 807 |
| 519 | Ala | Glu | Leu | Arg | Ala | Thr | Lys | Thr | Ile | Gly | Cys | Ser | Pro | Cys | Thr | Thr | |
| 520 | | | | 110 | | | | | 115 | | | | | 120 | | | |
| 521 | | | | | | | | | | | | | | | | | |
| 522 | GCA | TTC | CGG | CTG | TGC | CTG | AAG | GAG | TAC | CAG | ACC | ACG | GAG | CAG | GGT | GCC | 855 |
| 523 | Ala | Phe | Arg | Leu | Cys | Leu | Lys | Glu | Tyr | Gln | Thr | Thr | Glu | Gln | Gly | Ala | |
| 524 | | | 125 | | | | | 130 | | | | | 135 | | | | |
| 525 | | | | | | | | | | | | | | | | | |
| 526 | AGC | ATA | TCC | ACG | GGC | TGT | TCG | TTT | GGC | AAC | GCC | ACC | ACC | AAG | ATA | CTG | 903 |
| 527 | Ser | Ile | Ser | Thr | Gly | Cys | Ser | Phe | Gly | Asn | Ala | Thr | Thr | Lys | Ile | Leu | |
| 528 | | 140 | | | | | 145 | | | | | 150 | | | | | |
| 529 | | | | | | | | | | | | | | | | | |
| 530 | GGT | GGC | TCC | AGC | TTT | GTG | CTC | AGC | GAT | CCG | GGT | GTG | GGA | GCC | ATT | GTG | 951 |
| 531 | Gly | Gly | Ser | Ser | Phe | Val | Leu | Ser | Asp | Pro | Gly | Val | Gly | Ala | Ile | Val | |
| 532 | 155 | | | | | 160 | | | | | 165 | | | | | 170 | |
| 533 | | | | | | | | | | | | | | | | | |
| 534 | CTG | CCC | TTT | ACG | TTT | CGT | TGG | ACG | AAG | TCG | TTT | ACG | CTG | ATA | CTG | CAG | 999 |
| 535 | Leu | Pro | Phe | Thr | Phe | Arg | Trp | Thr | Lys | Ser | Phe | Thr | Leu | Ile | Leu | Gln | |
| 536 | | | | | 175 | | | | | 180 | | | | | 185 | | |
| 537 | | | | | | | | | | | | | | | | | |
| 538 | GCG | TTG | GAT | ATG | TAC | AAC | ACA | TCC | TAT | CCA | GAT | GCG | GAG | AGG | TTA | ATT | 1047 |
| 539 | Ala | Leu | Asp | Met | Tyr | Asn | Thr | Ser | Tyr | Pro | Asp | Ala | Glu | Arg | Leu | Ile | |
| 540 | | | | 190 | | | | | 195 | | | | | 200 | | | |
| 541 | | | | | | | | | | | | | | | | | |
| 542 | GAG | GAA | ACA | TCA | TAC | TCG | GGC | GTG | ATA | CTG | CCG | TCG | CCG | GAG | TGG | AAG | 1095 |
| 543 | Glu | Glu | Thr | Ser | Tyr | Ser | Gly | Val | Ile | Leu | Pro | Ser | Pro | Glu | Trp | Lys | |
| 544 | | | 205 | | | | | 210 | | | | | 215 | | | | |
| 545 | | | | | | | | | | | | | | | | | |
| 546 | ACG | CTG | GAC | CAC | ATC | GGG | CGG | AAC | GCG | CGG | ATC | ACC | TAC | CGT | GTC | CGG | 1143 |
| 547 | Thr | Leu | Asp | His | Ile | Gly | Arg | Asn | Ala | Arg | Ile | Thr | Tyr | Arg | Val | Arg | |
| 548 | | 220 | | | | | 225 | | | | | 230 | | | | | |
| 549 | | | | | | | | | | | | | | | | | |
| 550 | GTG | CAA | TGC | GCC | GTT | ACC | TAC | TAC | AAC | ACG | ACC | TGC | ACG | ACC | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:08:55

INPUT SET: S7068.raw

```

562   ATA TGC AAG GCG GGC TGC GAC CCC GTC CAC GGC
563   Ile Cys Lys Ala Gly Cys Asp Pro Val His Gly
564           285                      290
565
566
567   (2) INFORMATION FOR SEQ ID NO:4:
568
569       (i) SEQUENCE CHARACTERISTICS:
570           (A) LENGTH: 293 amino acids
571           (B) TYPE: amino acid
572           (D) TOPOLOGY: unknown
573
574       (ii) MOLECULE TYPE: protein
575
576       (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:
577
578   Met Phe Arg Lys His Phe Arg Arg Lys Pro Ala Thr Ser Ser Ser Leu
579       1             5             10             15
580
581   Glu Ser Thr Ile Glu Ser Ala Asp Ser Leu Gly Met Ser Lys Lys Thr
582           20             25             30
583
584   Ala Thr Lys Arg Gln Arg Pro Arg His Arg Val Pro Lys Ile Ala Thr
585           35             40             45
586
587   Leu Pro Ser Thr Ile Arg Asp Cys Arg Ser Leu Lys Ser Ala Cys Asn
588       50             55             60
589
590   Leu Ile Ala Leu Ile Leu Ile Leu Leu Val His Lys Ile Ser Ala Ala
591       65             70             75             80
592
593   Gly Asn Phe Glu Leu Glu Ile Leu Glu Ile Ser Asn Thr Asn Ser His
594           85             90             95
595
596   Leu Leu Asn Gly Tyr Cys Cys Gly Met Pro Ala Glu Leu Arg Ala Thr
597       100            105            110
598
599   Lys Thr Ile Gly Cys Ser Pro Cys Thr Thr Ala Phe Arg Leu Cys Leu
600       115            120            125
601
602   Lys Glu Tyr Gln Thr Thr Glu Gln Gly Ala Ser Ile Ser Thr Gly Cys
603       130            135            140
604
605   Ser Phe Gly Asn Ala Thr Thr Lys Ile Leu Gly Gly Ser Ser Phe Val
606       145            150            155            160
607
608   Leu Ser Asp Pro Gly Val Gly Ala Ile Val Leu Pro Phe Thr Phe Arg
609           165            170            175
610
611   Trp Thr Lys Ser Phe Thr Leu Ile Leu Gln Ala Leu Asp Met Tyr Asn
612           180            185            190

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RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:09:01

INPUT SET: S7068.raw

613
614 Thr Ser Tyr Pro Asp Ala Glu Arg Leu Ile Glu Glu Thr Ser Tyr Ser
615 195 200 205
616
617 Gly Val Ile Leu Pro Ser Pro Glu Trp Lys Thr Leu Asp His Ile Gly
618 210 215 220
619
620 Arg Asn Ala Arg Ile Thr Tyr Arg Val Arg Val Gln Cys Ala Val Thr
621 225 230 235 240
622
623 Tyr Tyr Asn Thr Thr Cys Thr Thr Phe Cys Arg Pro Arg Asp Asp Gln
624 245 250 255
625
626 Phe Gly His Tyr Ala Cys Gly Ser Glu Gly Gln Lys Leu Cys Leu Asn
627 260 265 270
628
629 Gly Trp Gln Gly Val Asn Cys Glu Glu Ala Ile Cys Lys Ala Gly Cys
630 275 280 285
631
632 Asp Pro Val His Gly
633 290
634
635

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 267 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

650 CGGTGGACTT CCTTCGTGTA TTGGTGGGAG CCCTCGGGAA CGGGGGGTAA CACTGAAAGG 60
651
652 TCGAGTACCC ATTTCCGTCA TAACGGGTTG GTCGCCCCCT AGGGGTCGGA GTCAGGTGGA 120
653
654 CGGGAGGTCG ACAACGCCCCG GGGGACGGGT GGTACATGGT GTAAGGTCTT TACCGGACCG 180
655
656 GGCAAACGGG TCACACCGAA AGGGGTGAAC GGTAAC TACG GGGTCGTCCT GCCCGTCCAT 240
657
658 CGAGTCTGGT AAGAGGGTCG CCTTAAG 267
659

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 574 base pairs

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:09:08

INPUT SET: S7068.raw

664 (B) TYPE: nucleic acid
665 (C) STRANDEDNESS: double
666 (D) TOPOLOGY: unknown
667
668 (ii) MOLECULE TYPE: cDNA
669
670
671
672
673 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:
674
675 GAATTCCTTC CATTATACGT GACTTTTCTG AAAGTGTAGC CACCCTAGTG TCTCTAACTC 60
676
677 CCTCTGGAGT TTGTCAGCTT TGGTCTTTTC AAAGAGCAGG CTCTCTTCAA GCTCCTTAAT 120
678
679 GCGGGCATGC TCCAGTTTGG TCTGCGTCTC AAGATCACCT TTGGTAATTG ATTCTTCTTC 180
680
681 AACCCGGAAC TGAAGGCTGG CTCTCACCTT CTAGGCAGAG CAGGAATTCC GAGGTGGATG 240
682
683 TGTTAGATGT GAATGTCCGT GGCCCAGATG GCTGCACCCC ATTGATGTTG GCTTCTCTCC 300
684
685 GAGGAGGCAG CTCAGATTTG AGTGATGAAG ATGAAGATGC AGAGGACTGT TCTGCTAACA 360
686
687 TCATCACAGA CTTGGTCTAC CAGGGTGCCA GCCTCCAGNC CAGACAGACC GGACTGGTGA 420
688
689 GATGGCCCTG CACCTTGCAG CCCGCTACTC ACGGGCTGAT GCTGCCAAGC GTCTCCTGGA 480
690
691 TGCAGGTGCA GATGCCAATG CCCAGGACAA CATGGGCCGC TGTCCACTCC ATGCTGCAGT 540
692
693 GGCACGTGAT GCCAAGGTGT ATTCAGATCT GTTA 574
694
695 (2) INFORMATION FOR SEQ ID NO:7:
696
697 (i) SEQUENCE CHARACTERISTICS:
698 (A) LENGTH: 295 base pairs
699 (B) TYPE: nucleic acid
700 (C) STRANDEDNESS: double
701 (D) TOPOLOGY: unknown
702
703 (ii) MOLECULE TYPE: cDNA
704
705
706
707 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:
708
709 TCCAGATTCT GATTGCAAC CGAGTAACTG ATCTAGATGC CAGGATGAAT GATGGTACTA 60
710
711 CACCCCTGAT CCTGGCTGCC CGCCTGGCTG TGGAGGGAAT GGTGGCAGAA CTGATCAACT 120
712
713 GCCAAGCGGA TGTGAATGCA GTGGATGACC ATGAAAATC TGCTCTTCAC TGGGCAGCTG 180
714

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:09:14

INPUT SET: S7068.raw

715 CTGTCAATAA TGTGGAGGCA ACTCTTTTGT TGTGAAAAA TGGGGCCAAC CGAGACATGC 240
716
717 AGGACAACAA GGAAGAGACA CCTCTGTTTC TTGCTGCCCC GGAGGAGCTA TAAGC 295
718
719
720 (2) INFORMATION FOR SEQ ID NO:8:
721
722 (i) SEQUENCE CHARACTERISTICS:
723 (A) LENGTH: 248 base pairs
724 (B) TYPE: nucleic acid
725 (C) STRANDEDNESS: double
726 (D) TOPOLOGY: unknown
727
728 (ii) MOLECULE TYPE: cDNA
729
730
731
732 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:
733
734 GAATTCCATT CAGGAGGAAA GGGTGGGGAG AGAAGCAGGC ACCCACTTTC CCGTGGCTGG 60
735
736 ACTCGTTCCC AGGTGGCTCC ACCGGCAGCT GTGACCGCCG CAGGTGGGGG CGGAGTGCCA 120
737
738 TTCAGAAAAT TCCAGAAAAG CCCTACCCCA ACTCGGACGG CAACGTCACA CCCGTGGGTA 180
739
740 GCAACTGGCA CACAAACAGC CAGCGTGTCT GGGGCACGGG GGGATGGCAC CCCCTGCAGG 240
741
742 CAGAGCTG 248
743
744 (2) INFORMATION FOR SEQ ID NO:9:
745
746 (i) SEQUENCE CHARACTERISTICS:
747 (A) LENGTH: 323 base pairs
748 (B) TYPE: nucleic acid
749 (C) STRANDEDNESS: double
750 (D) TOPOLOGY: unknown
751
752 (ii) MOLECULE TYPE: cDNA
753
754
755
756
757 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:
758
759 TACGTATCTC GAGCACAGAC AGCTGACGTA CACTTTTNA GTGCGAGGGA CATTCTGCCG 60
760
761 ACCAGTACGA ACATTTAGGC TCAGTACGGT AGGTCCATGG CCAAGACTAG GAGACGTAGG 120
762
763 GAGCTACAGG TCCCGCTCGC TAAACTCGGA CCACTGAAAC CTCCGGTCGA CAGTCGGTAA 180
764
765 GCGAACAAGA GGGCCAGATC TTAGAGAAGG TGTCGCGGCG AGACTCGGGC TCGGGTCAGG 240

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:09:20

INPUT SET: S7068.raw

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766
767 CGGCCTTAAG GACGTCGGGC CCNNNAGGTG ATCAAGATCT CGNCNCGGCG GGCGCCACCT      300
768
769 CGAGGNCGAA AACAAGGGAA ATC                                          323
770
771
772 (2) INFORMATION FOR SEQ ID NO:10:
773
774 (i) SEQUENCE CHARACTERISTICS:
775 (A) LENGTH: 3234 base pairs
776 (B) TYPE: nucleic acid
777 (C) STRANDEDNESS: double
778 (D) TOPOLOGY: unknown
779
780 (ii) MOLECULE TYPE: cDNA
781
782
783 (ix) FEATURE:
784 (A) NAME/KEY: CDS
785 (B) LOCATION: 1..3234
786
787
788 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:
789
790 TGC CAG GAG GAC GCG GGC AAC AAG GTC TGC AGC CTG CAG TGC AAC AAC      48
791 Cys Gln Glu Asp Ala Gly Asn Lys Val Cys Ser Leu Gln Cys Asn Asn
792 1 5 10 15
793
794 CAC GCG TGC GGC TGG GAC GGC GGT GAC TGC TCC CTC AAC TTC AAT GAC      96
795 His Ala Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu Asn Phe Asn Asp
796 20 25 30
797
798 CCC TGG AAG AAC TGC ACG CAG TCT CTG CAG TGC TGG AAG TAC TTC AGT      144
799 Pro Trp Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp Lys Tyr Phe Ser
800 35 40 45
801
802 GAC GGC CAC TGT GAC AGC CAG TGC AAC TCA GCC GGC TGC CTC TTC GAC      192
803 Asp Gly His Cys Asp Ser Gln Cys Asn Ser Ala Gly Cys Leu Phe Asp
804 50 55 60
805
806 GGC TTT GAC TGC CAG CGT GCG GAA GGC CAG TGC AAC CCC CTG TAC GAC      240
807 Gly Phe Asp Cys Gln Arg Ala Glu Gly Gln Cys Asn Pro Leu Tyr Asp
808 65 70 75 80
809
810 CAG TAC TGC AAG GAC CAC TTC AGC GAC GGG CAC TGC GAC CAG GGC TGC      288
811 Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys Asp Gln Gly Cys
812 85 90 95
813
814 AAC AGC GCG GAG TGC GAG TGG GAC GGG CTG GAC TGT GCG GAG CAT GTA      336
815 Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys Ala Glu His Val
816 100 105 110

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INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|
| 817 | | | | | | | | | | | | | | | | | | |
| 818 | CCC | GAG | AGG | CTG | GCG | GCC | GGC | ACG | CTG | GTG | GTG | GTG | GTG | CTG | ATG | CCG | | 384 |
| 819 | Pro | Glu | Arg | Leu | Ala | Ala | Gly | Thr | Leu | Val | Val | Val | Val | Leu | Met | Pro | | |
| 820 | | | 115 | | | | | 120 | | | | | 125 | | | | | |
| 821 | | | | | | | | | | | | | | | | | | |
| 822 | CCG | GAG | CAG | CTG | CGC | AAC | AGC | TCC | TTC | CAC | TTC | CTG | CGG | GAG | CTC | AGC | | 432 |
| 823 | Pro | Glu | Gln | Leu | Arg | Asn | Ser | Ser | Phe | His | Phe | Leu | Arg | Glu | Leu | Ser | | |
| 824 | | | 130 | | | | 135 | | | | | 140 | | | | | | |
| 825 | | | | | | | | | | | | | | | | | | |
| 826 | CGC | GTG | CTG | CAC | ACC | AAC | GTG | GTC | TTC | AAG | CGT | GAC | GCA | CAC | GGC | CAG | | 480 |
| 827 | Arg | Val | Leu | His | Thr | Asn | Val | Val | Phe | Lys | Arg | Asp | Ala | His | Gly | Gln | | |
| 828 | 145 | | | | | 150 | | | | | 155 | | | | | 160 | | |
| 829 | | | | | | | | | | | | | | | | | | |
| 830 | CAG | ATG | ATC | TTC | CCC | TAC | TAC | GGC | CGC | GAG | GAG | GAG | CTG | CGC | AAG | CAC | | 528 |
| 831 | Gln | Met | Ile | Phe | Pro | Tyr | Tyr | Gly | Arg | Glu | Glu | Glu | Leu | Arg | Lys | His | | |
| 832 | | | | | 165 | | | | 170 | | | | | | 175 | | | |
| 833 | | | | | | | | | | | | | | | | | | |
| 834 | CCC | ATC | AAG | CGT | GCC | GCC | GAG | GGC | TGG | GCC | GCA | CCT | GAC | GCC | CTG | CTG | | 576 |
| 835 | Pro | Ile | Lys | Arg | Ala | Ala | Glu | Gly | Trp | Ala | Ala | Pro | Asp | Ala | Leu | Leu | | |
| 836 | | | | 180 | | | | | 185 | | | | | 190 | | | | |
| 837 | | | | | | | | | | | | | | | | | | |
| 838 | GGC | CAG | GTG | AAG | GCC | TCG | CTG | CTC | CCT | GGT | GGC | AGC | GAG | GGT | GGG | CGG | | 624 |
| 839 | Gly | Gln | Val | Lys | Ala | Ser | Leu | Leu | Pro | Gly | Gly | Ser | Glu | Gly | Gly | Arg | | |
| 840 | | | 195 | | | | | 200 | | | | | 205 | | | | | |
| 841 | | | | | | | | | | | | | | | | | | |
| 842 | CGG | CGG | AGG | GAG | CTG | GAC | CCC | ATG | GAC | GTC | CGC | GGC | TCC | ATC | GTC | TAC | | 672 |
| 843 | Arg | Arg | Arg | Glu | Leu | Asp | Pro | Met | Asp | Val | Arg | Gly | Ser | Ile | Val | Tyr | | |
| 844 | | | 210 | | | | 215 | | | | | 220 | | | | | | |
| 845 | | | | | | | | | | | | | | | | | | |
| 846 | CTG | GAG | ATT | GAC | AAC | CGG | CAG | TGT | GTG | CAG | GCC | TCC | TCG | CAG | TGC | TTC | | 720 |
| 847 | Leu | Glu | Ile | Asp | Asn | Arg | Gln | Cys | Val | Gln | Ala | Ser | Ser | Gln | Cys | Phe | | |
| 848 | 225 | | | | | 230 | | | | | 235 | | | | | 240 | | |
| 849 | | | | | | | | | | | | | | | | | | |
| 850 | CAG | AGT | GCC | ACC | GAC | GTG | GCC | GCA | TTC | CTG | GGA | GCG | CTC | GCC | TCG | CTG | | 768 |
| 851 | Gln | Ser | Ala | Thr | Asp | Val | Ala | Ala | Phe | Leu | Gly | Ala | Leu | Ala | Ser | Leu | | |
| 852 | | | | | 245 | | | | 250 | | | | | | 255 | | | |
| 853 | | | | | | | | | | | | | | | | | | |
| 854 | GGC | AGC | CTC | AAC | ATC | CCC | TAC | AAG | ATC | GAG | GCC | GTG | CAG | AGT | GAG | ACC | | 816 |
| 855 | Gly | Ser | | | | | | | | | | | | | | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:09:33

INPUT SET: S7068.raw

| | | | | | | | | | |
|-----|---|------|-----|-----|-----|--|-----|--|--|
| 868 | 305 | | 310 | | 315 | | 320 | | |
| 869 | | | | | | | | | |
| 870 | AAA GTG TCT GAG GCC AGC AAG AAG AAG CGG CGG GAG CCC CTC GGC GAG | 1008 | | | | | | | |
| 871 | Lys Val Ser Glu Ala Ser Lys Lys Lys Arg Arg Glu Pro Leu Gly Glu | | | | | | | | |
| 872 | | 325 | 330 | 335 | | | | | |
| 873 | | | | | | | | | |
| 874 | GAC TCC GTG GGC CTC AAG CCC CTG AAG AAC GCT TCA GAC GGT GCC CTC | 1056 | | | | | | | |
| 875 | Asp Ser Val Gly Leu Lys Pro Leu Lys Asn Ala Ser Asp Gly Ala Leu | | | | | | | | |
| 876 | | 340 | 345 | 350 | | | | | |
| 877 | | | | | | | | | |
| 878 | ATG GAC GAC AAC CAG AAT GAG TGG GGG GAC GAG GAC CTG GAG ACC AAG | 1104 | | | | | | | |
| 879 | Met Asp Asp Asn Gln Asn Glu Trp Gly Asp Glu Asp Leu Glu Thr Lys | | | | | | | | |
| 880 | | 355 | 360 | 365 | | | | | |
| 881 | | | | | | | | | |
| 882 | AAG TTC CGG TTC GAG GAG CCC GTG GTT CTG CCT GAC CTG GAC GAC CAG | 1152 | | | | | | | |
| 883 | Lys Phe Arg Phe Glu Glu Pro Val Val Leu Pro Asp Leu Asp Asp Gln | | | | | | | | |
| 884 | | 370 | 375 | 380 | | | | | |
| 885 | | | | | | | | | |
| 886 | ACA GAC CAC CGG CAG TGG ACT CAG CAG CAC CTG GAT GCC GCT GAC CTG | 1200 | | | | | | | |
| 887 | Thr Asp His Arg Gln Trp Thr Gln Gln His Leu Asp Ala Ala Asp Leu | | | | | | | | |
| 888 | | 385 | 390 | 395 | | | | | |
| 889 | | | | 400 | | | | | |
| 890 | CGC ATG TCT GCC ATG GCC CCC ACA CCG CCC CAG GGT GAG GTT GAC GCC | 1248 | | | | | | | |
| 891 | Arg Met Ser Ala Met Ala Pro Thr Pro Pro Gln Gly Glu Val Asp Ala | | | | | | | | |
| 892 | | 405 | 410 | 415 | | | | | |
| 893 | | | | | | | | | |
| 894 | GAC TGC ATG GAC GTC AAT GTC CGC GGG CCT GAT GGC TTC ACC CCG CTC | 1296 | | | | | | | |
| 895 | Asp Cys Met Asp Val Asn Val Arg Gly Pro Asp Gly Phe Thr Pro Leu | | | | | | | | |
| 896 | | 420 | 425 | 430 | | | | | |
| 897 | | | | | | | | | |
| 898 | ATG ATC GCC TCC TGC AGC GGG GGC GGC CTG GAG ACG GGC AAC AGC GAG | 1344 | | | | | | | |
| 899 | Met Ile Ala Ser Cys Ser Gly Gly Gly Leu Glu Thr Gly Asn Ser Glu | | | | | | | | |
| 900 | | 435 | 440 | 445 | | | | | |
| 901 | | | | | | | | | |
| 902 | GAA GAG GAG GAC GCG CCG GCC GTC ATC TCC GAC TTC ATC TAC CAG GGC | 1392 | | | | | | | |
| 903 | Glu Glu Glu Asp Ala Pro Ala Val Ile Ser Asp Phe Ile Tyr Gln Gly | | | | | | | | |
| 904 | | 450 | 455 | 460 | | | | | |
| 905 | | | | | | | | | |
| 906 | GCC AGC CTG CAC AAC CAG ACA GAC CGC ACG GGC GAG ACC GCC TTG CAC | 1440 | | | | | | | |
| 907 | Ala Ser Leu His Asn Gln Thr Asp Arg Thr Gly Glu Thr Ala Leu His | | | | | | | | |
| 908 | | 465 | 470 | 475 | | | | | |
| 909 | | | | 480 | | | | | |
| 910 | CTG GCC GCC CGC TAC TCA CGC TCT GAT GCC GCC AAG CGC CTG CTG GAG | 1488 | | | | | | | |
| 911 | Leu Ala Ala Arg Tyr Ser Arg Ser Asp Ala Ala Lys Arg Leu Leu Glu | | | | | | | | |
| 912 | | 485 | 490 | 495 | | | | | |
| 913 | | | | | | | | | |
| 914 | GCC AGC GCA GAT GCC AAC ATC CAG GAC AAC ATG GGC CGC ACC CCG CTG | 1536 | | | | | | | |
| 915 | Ala Ser Ala Asp Ala Asn Ile Gln Asp Asn Met Gly Arg Thr Pro Leu | | | | | | | | |
| 916 | | 500 | 505 | 510 | | | | | |
| 917 | | | | | | | | | |
| 918 | CAT GCG GCT GTG TCT GCC GAC GCA CAA GGT GTC TTC CAG ATC CTG ATC | 1584 | | | | | | | |

DATE: 12/16/93
TIME: 13:09:40

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 919 | His | Ala | Ala | Val | Ser | Ala | Asp | Ala | Gln | Gly | Val | Phe | Gln | Ile | Leu | Ile | |
| 920 | | | 515 | | | | | 520 | | | | | 525 | | | | |
| 921 | | | | | | | | | | | | | | | | | |
| 922 | CGG | AAC | CGA | GCC | ACA | GAC | CTG | GAT | GCC | CGC | ATG | CAT | GAT | GGC | ACG | ACG | 1632 |
| 923 | Arg | Asn | Arg | Ala | Thr | Asp | Leu | Asp | Ala | Arg | Met | His | Asp | Gly | Thr | Thr | |
| 924 | | 530 | | | | | 535 | | | | | 540 | | | | | |
| 925 | | | | | | | | | | | | | | | | | |
| 926 | CCA | CTG | ATC | CTG | GCT | GCC | CGC | CTG | GCC | GTG | GAG | GGC | ATG | CTG | GAG | GAC | 1680 |
| 927 | Pro | Leu | Ile | Leu | Ala | Ala | Arg | Leu | Ala | Val | Glu | Gly | Met | Leu | Glu | Asp | |
| 928 | | 545 | | | | 550 | | | | | 555 | | | | | 560 | |
| 929 | | | | | | | | | | | | | | | | | |
| 930 | CTC | ATC | AAC | TCA | CAC | GCC | GAC | GTC | AAC | GCC | GTA | GAT | GAC | CTG | GGC | AAG | 1728 |
| 931 | Leu | Ile | Asn | Ser | His | Ala | Asp | Val | Asn | Ala | Val | Asp | Asp | Leu | Gly | Lys | |
| 932 | | | | | 565 | | | | | 570 | | | | | 575 | | |
| 933 | | | | | | | | | | | | | | | | | |
| 934 | TCC | GCC | CTG | CAC | TGG | GCC | GCC | GCC | GTG | AAC | AAT | GTG | GAT | GCC | GCA | GTT | 1776 |
| 935 | Ser | Ala | Leu | His | Trp | Ala | Ala | Ala | Val | Asn | Asn | Val | Asp | Ala | Ala | Val | |
| 936 | | | | 580 | | | | 585 | | | | | | 590 | | | |
| 937 | | | | | | | | | | | | | | | | | |
| 938 | GTG | CTC | CTG | AAG | AAC | GGG | GCT | AAC | AAA | GAT | ATG | CAG | AAC | AAC | AGG | GAG | 1824 |
| 939 | Val | Leu | Leu | Lys | Asn | Gly | Ala | Asn | Lys | Asp | Met | Gln | Asn | Asn | Arg | Glu | |
| 940 | | | 595 | | | | | 600 | | | | | 605 | | | | |
| 941 | | | | | | | | | | | | | | | | | |
| 942 | GAG | ACA | CCC | CTG | TTT | CTG | GCC | GCC | CGG | GAG | GGC | AGC | TAC | GAG | ACC | GCC | 1872 |
| 943 | Glu | Thr | Pro | Leu | Phe | Leu | Ala | Ala | Arg | Glu | Gly | Ser | Tyr | Glu | Thr | Ala | |
| 944 | | 610 | | | | | 615 | | | | | 620 | | | | | |
| 945 | | | | | | | | | | | | | | | | | |
| 946 | AAG | GTG | CTG | CTG | GAC | CAC | TTT | GCC | AAC | CGG | GAC | ATC | ACG | GAT | CAT | ATG | 1920 |
| 947 | Lys | Val | Leu | Leu | Asp | His | Phe | Ala | Asn | Arg | Asp | Ile | Thr | Asp | His | Met | |
| 948 | | 625 | | | 630 | | | | | | 635 | | | | | 640 | |
| 949 | | | | | | | | | | | | | | | | | |
| 950 | GAC | CGC | CTG | CCG | CGC | GAC | ATC | GCA | CAG | GAG | CGC | ATG | CAT | CAC | GAC | ATC | 1968 |
| 951 | Asp | Arg | Leu | Pro | Arg | Asp | Ile | Ala | Gln | Glu | Arg | Met | His | His | Asp | Ile | |
| 952 | | | | | 645 | | | | | 650 | | | | | 655 | | |
| 953 | | | | | | | | | | | | | | | | | |
| 954 | GTG | AGG | CTG | CTG | GAC | GAG | TAC | AAC | CTG | GTG | CGC | AGC | CCG | CAG | CTG | CAC | 2016 |
| 955 | Val | Arg | Leu | Leu | Asp | Glu | Tyr | Asn | Leu | Val | Arg | Ser | Pro | Gln | Leu | His | |
| 956 | | | | 660 | | | | | 665 | | | | | 670 | | | |
| 957 | | | | | | | | | | | | | | | | | |
| 958 | GGA | GCC | CCG | CTG | GGG | GGC | ACG | | | | | | | | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:09:46

INPUT SET: S7068.raw

| | | |
|------|---|------|
| 970 | AAG GAC CTC AAG GCA CGG AGG AAG AAG TCC CAG GAT GGC AAG GGC TGC | 2208 |
| 971 | Lys Asp Leu Lys Ala Arg Arg Lys Lys Ser Gln Asp Gly Lys Gly Cys | |
| 972 | 725 730 735 | |
| 973 | | |
| 974 | CTG CTG GAC AGC TCC GGC ATG CTC TCG CCC GTG GAC TCC CTG GAG TCA | 2256 |
| 975 | Leu Leu Asp Ser Ser Gly Met Leu Ser Pro Val Asp Ser Leu Glu Ser | |
| 976 | 740 745 750 | |
| 977 | | |
| 978 | CCC CAT GGC TAC CTG TCA GAC GTG GCC TCG CCG CCA CTG CTG CCC TCC | 2304 |
| 979 | Pro His Gly Tyr Leu Ser Asp Val Ala Ser Pro Pro Leu Leu Pro Ser | |
| 980 | 755 760 765 | |
| 981 | | |
| 982 | CCG TTC CAG CAG TCT CCG TCC GTG CCC CTC AAC CAC CTG CCT GGG ATG | 2352 |
| 983 | Pro Phe Gln Gln Ser Pro Ser Val Pro Leu Asn His Leu Pro Gly Met | |
| 984 | 770 775 780 | |
| 985 | | |
| 986 | CCC GAC ACC CAC CTG GGC ATC GGG CAC CTG AAC GTG GCG GCC AAG CCC | 2400 |
| 987 | Pro Asp Thr His Leu Gly Ile Gly His Leu Asn Val Ala Ala Lys Pro | |
| 988 | 785 790 795 800 | |
| 989 | | |
| 990 | GAG ATG GCG GCG CTG GGT GGG GGC GGC CGG CTG GCC TTT GAG ACT GGC | 2448 |
| 991 | Glu Met Ala Ala Leu Gly Gly Gly Gly Arg Leu Ala Phe Glu Thr Gly | |
| 992 | 805 810 815 | |
| 993 | | |
| 994 | CCA CCT CGT CTC TCC CAC CTG CCT GTG GCC TCT GGC ACC AGC ACC GTC | 2496 |
| 995 | Pro Pro Arg Leu Ser His Leu Pro Val Ala Ser Gly Thr Ser Thr Val | |
| 996 | 820 825 830 | |
| 997 | | |
| 998 | CTG GGC TCC AGC AGC GGA GGG GCC CTG AAT TTC ACT GTG GGC GGG TCC | 2544 |
| 999 | Leu Gly Ser Ser Ser Gly Gly Ala Leu Asn Phe Thr Val Gly Gly Ser | |
| 1000 | 835 840 845 | |
| 1001 | | |
| 1002 | ACC AGT TTG AAT GGT CAA TGC GAG TGG CTG TCC CGG CTG CAG AGC GGC | 2592 |
| 1003 | Thr Ser Leu Asn Gly Gln Cys Glu Trp Leu Ser Arg Leu Gln Ser Gly | |
| 1004 | 850 855 860 | |
| 1005 | | |
| 1006 | ATG GTG CCG AAC CAA TAC AAC CCT CTG CGG GGG AGT GTG GCA CCA GGC | 2640 |
| 1007 | Met Val Pro Asn Gln Tyr Asn Pro Leu Arg Gly Ser Val Ala Pro Gly | |
| 1008 | 865 870 875 880 | |
| 1009 | | |
| 1010 | CCC CTG AGC ACA CAG GCC CCC TCC CTG CAG CAT GGC ATG GTA GGC CCG | 2688 |
| 1011 | Pro Leu Ser Thr Gln Ala Pro Ser Leu Gln His Gly Met Val Gly Pro | |
| 1012 | 885 890 895 | |
| 1013 | | |
| 1014 | CTG CAC AGT AGC CTT GCT GCC AGC GCC CTG TCC CAG ATG ATG AGC TAC | 2736 |
| 1015 | Leu His Ser Ser Leu Ala Ala Ser Ala Leu Ser Gln Met Met Ser Tyr | |
| 1016 | 900 905 910 | |
| 1017 | | |
| 1018 | CAG GGC CTG CCC AGC ACC CGG CTG GCC ACC CAG CCT CAC CTG GTG CAG | 2784 |
| 1019 | Gln Gly Leu Pro Ser Thr Arg Leu Ala Thr Gln Pro His Leu Val Gln | |
| 1020 | 915 920 925 | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:09:52

INPUT SET: S7068.raw

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1021
1022 ACC CAG CAG GTG CAG CCA CAA AAC TTA CAG ATG CAG CAG CAG AAC CTG      2832
1023 Thr Gln Gln Val Gln Pro Gln Asn Leu Gln Met Gln Gln Gln Asn Leu
1024      930                      935                      940
1025
1026 CAG CCA GCA AAC ATC CAG CAG CAG CAA AGC CTG CAG CCG CCA CCA CCA      2880
1027 Gln Pro Ala Asn Ile Gln Gln Gln Gln Ser Leu Gln Pro Pro Pro Pro
1028 945                      950                      955                      960
1029
1030 CCA CCA CAG CCG CAC CTT GGC GTG AGC TCA GCA GCC AGC GGC CAC CTG      2928
1031 Pro Pro Gln Pro His Leu Gly Val Ser Ser Ala Ala Ser Gly His Leu
1032                      965                      970                      975
1033
1034 GGC CGG AGC TTC CTG AGT GGA GAG CCG AGC CAG GCA GAC GTG CAG CCA      2976
1035 Gly Arg Ser Phe Leu Ser Gly Glu Pro Ser Gln Ala Asp Val Gln Pro
1036                      980                      985                      990
1037
1038 CTG GGC CCC AGC AGC CTG GCG GTG CAC ACT ATT CTG CCC CAG GAG AGC      3024
1039 Leu Gly Pro Ser Ser Leu Ala Val His Thr Ile Leu Pro Gln Glu Ser
1040      995                      1000                      1005
1041
1042 CCC GCC CTG CCC ACG TCG CTG CCA TCC TCG CTG GTC CCA CCC GTG ACC      3072
1043 Pro Ala Leu Pro Thr Ser Leu Pro Ser Ser Leu Val Pro Pro Val Thr
1044      1010                      1015                      1020
1045
1046 GCA GCC CAG TTC CTG ACG CCC CCC TCG CAG CAC AGC TAC TCC TCG CCT      3120
1047 Ala Ala Gln Phe Leu Thr Pro Pro Ser Gln His Ser Tyr Ser Ser Pro
1048 1025                      1030                      1035                      1040
1049
1050 GTG GAC AAC ACC CCC AGC CAC CAG CTA CAG GTG CCT GTT CCT GTA ATG      3168
1051 Val Asp Asn Thr Pro Ser His Gln Leu Gln Val Pro Val Pro Val Met
1052                      1045                      1050                      1055
1053
1054 GTA ATG ATC CGA TCT TCG GAT CCT TCT AAA GGC TCA TCA ATT TTG ATC      3216
1055 Val Met Ile Arg Ser Ser Asp Pro Ser Lys Gly Ser Ser Ile Leu Ile
1056      1060                      1065                      1070
1057
1058 GAA GCT CCC GAC TCA TGG      3234
1059 Glu Ala Pro Asp Ser Trp
1060      1075
1061
1062

```

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1078 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: protein

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:09:58

INPUT SET: S7068.raw

```

1072      (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:
1073
1074      Cys Gln Glu Asp Ala Gly Asn Lys Val Cys Ser Leu Gln Cys Asn Asn
1075          1              5              10              15
1076
1077      His Ala Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu Asn Phe Asn Asp
1078          20              25              30
1079
1080      Pro Trp Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp Lys Tyr Phe Ser
1081          35              40              45
1082
1083      Asp Gly His Cys Asp Ser Gln Cys Asn Ser Ala Gly Cys Leu Phe Asp
1084          50              55              60
1085
1086      Gly Phe Asp Cys Gln Arg Ala Glu Gly Gln Cys Asn Pro Leu Tyr Asp
1087          65              70              75              80
1088
1089      Gln Tyr Cys Lys Asp His Phe Ser Asp Gly His Cys Asp Gln Gly Cys
1090          85              90              95
1091
1092      Asn Ser Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys Ala Glu His Val
1093          100             105             110
1094
1095      Pro Glu Arg Leu Ala Ala Gly Thr Leu Val Val Val Val Leu Met Pro
1096          115             120             125
1097
1098      Pro Glu Gln Leu Arg Asn Ser Ser Phe His Phe Leu Arg Glu Leu Ser
1099          130             135             140
1100
1101      Arg Val Leu His Thr Asn Val Val Phe Lys Arg Asp Ala His Gly Gln
1102          145             150             155             160
1103
1104      Gln Met Ile Phe Pro Tyr Tyr Gly Arg Glu Glu Glu Leu Arg Lys His
1105          165             170             175
1106
1107      Pro Ile Lys Arg Ala Ala Glu Gly Trp Ala Ala Pro Asp Ala Leu Leu
1108          180             185             190
1109
1110      Gly Gln Val Lys Ala Ser Leu Leu Pro Gly Gly Ser Glu Gly Gly Arg
1111          195             200             205
1112
1113      Arg Arg Arg Glu Leu Asp Pro Met Asp Val Arg Gly Ser Ile Val Tyr
1114          210             215             220
1115
1116      Leu Glu Ile Asp Asn Arg Gln Cys Val Gln Ala Ser Ser Gln Cys Phe
1117          225             230             235             240
1118
1119      Gln Ser Ala Thr Asp Val Ala Ala Phe Leu Gly Ala Leu Ala Ser Leu
1120          245             250             255
1121
1122      Gly Ser Leu Asn Ile Pro Tyr Lys Ile Glu Ala Val Gln Ser Glu Thr

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RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:10:05

INPUT SET: S7068.raw

| | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|
| 1123 | | 260 | | 265 | | 270 | |
| 1124 | | | | | | | |
| 1125 | Val | Glu | Pro | Pro | Pro | Pro | Ala |
| 1126 | | | | | | | Gln |
| 1127 | | | | | | | Leu |
| 1128 | Ala | Ala | Phe | Val | Leu | Leu | Phe |
| 1129 | | | | | | | Val |
| 1130 | | | | | | | Gly |
| 1131 | Arg | Lys | Arg | Arg | Arg | Gln | His |
| 1132 | | | | | | | Gly |
| 1133 | | | | | | | Gln |
| 1134 | Lys | Val | Ser | Glu | Ala | Ser | Lys |
| 1135 | | | | | | | Lys |
| 1136 | | | | | | | Lys |
| 1137 | Asp | Ser | Val | Gly | Leu | Lys | Pro |
| 1138 | | | | | | | Leu |
| 1139 | | | | | | | Lys |
| 1140 | Met | Asp | Asp | Asn | Gln | Asn | Glu |
| 1141 | | | | | | | Trp |
| 1142 | | | | | | | Gly |
| 1143 | Lys | Phe | Arg | Phe | Glu | Glu | Pro |
| 1144 | | | | | | | Val |
| 1145 | | | | | | | Val |
| 1146 | Thr | Asp | His | Arg | Gln | Trp | Thr |
| 1147 | | | | | | | Gln |
| 1148 | | | | | | | Gln |
| 1149 | Arg | Met | Ser | Ala | Met | Ala | Pro |
| 1150 | | | | | | | Thr |
| 1151 | | | | | | | Pro |
| 1152 | Asp | Cys | Met | Asp | Val | Asn | Val |
| 1153 | | | | | | | Arg |
| 1154 | | | | | | | Gly |
| 1155 | Met | Ile | Ala | Ser | Cys | Ser | Gly |
| 1156 | | | | | | | Gly |
| 1157 | | | | | | | Gly |
| 1158 | Glu | Glu | Glu | Asp | Ala | Pro | Ala |
| 1159 | | | | | | | Val |
| 1160 | | | | | | | Ile |
| 1161 | Ala | Ser | Leu | His | Asn | Gln | Thr |
| 1162 | | | | | | | Asp |
| 1163 | | | | | | | Arg |
| 1164 | Leu | Ala | Ala | Arg | Tyr | Ser | Arg |
| 1165 | | | | | | | Ser |
| 1166 | | | | | | | Asp |
| 1167 | Ala | Ser | Ala | Asp | Ala | Asn | Ile |
| 1168 | | | | | | | Gln |
| 1169 | | | | | | | Asp |
| 1170 | His | Ala | Ala | Val | Ser | Ala | Asp |
| 1171 | | | | | | | Ala |
| 1172 | | | | | | | Gln |
| 1173 | Arg | Asn | Arg | Ala | Thr | Asp | Leu |

RAW SEQUENCE LISTING PATENT APPLICATION *US/08/083,590*

DATE: 12/16/93
TIME: 13:10:11

INPUT SET: *S7068.raw*

| | | | |
|------|---|---------|---------|
| 1174 | 530 | 535 | 540 |
| 1175 | | | |
| 1176 | Pro Leu Ile Leu Ala Ala Arg Leu Ala Val Glu Gly Met Leu Glu Asp | | |
| 1177 | 545 | 550 | 555 560 |
| 1178 | | | |
| 1179 | Leu Ile Asn Ser His Ala Asp Val Asn Ala Val Asp Asp Leu Gly Lys | | |
| 1180 | | 565 570 | 575 |
| 1181 | | | |
| 1182 | Ser Ala Leu His Trp Ala Ala Ala Val Asn Asn Val Asp Ala Ala Val | | |
| 1183 | | 580 585 | 590 |
| 1184 | | | |
| 1185 | Val Leu Leu Lys Asn Gly Ala Asn Lys Asp Met Gln Asn Asn Arg Glu | | |
| 1186 | | 595 600 | 605 |
| 1187 | | | |
| 1188 | Glu Thr Pro Leu Phe Leu Ala Ala Arg Glu Gly Ser Tyr Glu Thr Ala | | |
| 1189 | | 610 615 | 620 |
| 1190 | | | |
| 1191 | Lys Val Leu Leu Asp His Phe Ala Asn Arg Asp Ile Thr Asp His Met | | |
| 1192 | | 625 630 | 635 640 |
| 1193 | | | |
| 1194 | Asp Arg Leu Pro Arg Asp Ile Ala Gln Glu Arg Met His His Asp Ile | | |
| 1195 | | 645 650 | 655 |
| 1196 | | | |
| 1197 | Val Arg Leu Leu Asp Glu Tyr Asn Leu Val Arg Ser Pro Gln Leu His | | |
| 1198 | | 660 665 | 670 |
| 1199 | | | |
| 1200 | Gly Ala Pro Leu Gly Gly Thr Pro Thr Leu Ser Pro Pro Leu Cys Ser | | |
| 1201 | | 675 680 | 685 |
| 1202 | | | |
| 1203 | Pro Asn Gly Tyr Leu Gly Ser Leu Lys Pro Gly Val Gln Gly Lys Lys | | |
| 1204 | | 690 695 | 700 |
| 1205 | | | |
| 1206 | Val Arg Lys Pro Ser Ser Lys Gly Leu Ala Cys Gly Ser Lys Glu Ala | | |
| 1207 | | 705 710 | 715 720 |
| 1208 | | | |
| 1209 | Lys Asp Leu Lys Ala Arg Arg Lys Lys Ser Gln Asp Gly Lys Gly Cys | | |
| 1210 | | 725 730 | 735 |
| 1211 | | | |
| 1212 | Leu Leu Asp Ser Ser Gly Met Leu Ser Pro Val Asp Ser Leu Glu Ser | | |
| 1213 | | 740 745 | 750 |
| 1214 | | | |
| 1215 | Pro His Gly Tyr Leu Ser Asp Val Ala Ser Pro Pro Leu Leu Pro Ser | | |
| 1216 | | 755 760 | 765 |
| 1217 | | | |
| 1218 | Pro Phe Gln Gln Ser Pro Ser Val Pro Leu Asn His Leu Pro Gly Met | | |
| 1219 | | 770 775 | 780 |
| 1220 | | | |
| 1221 | Pro Asp Thr His Leu Gly Ile Gly His Leu Asn Val Ala Ala Lys Pro | | |
| 1222 | | 785 790 | 795 800 |
| 1223 | | | |
| 1224 | Glu Met Ala Ala Leu Gly Gly Gly Gly Arg Leu Ala Phe Glu Thr Gly | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:10:17

INPUT SET: S7068.raw

| | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|------|
| 1225 | | 805 | | 810 | | 815 | |
| 1226 | | | | | | | |
| 1227 | Pro | Pro | Arg | Leu | Ser | His | Leu |
| 1228 | | | | 820 | | | 825 |
| 1229 | | | | | | | 830 |
| 1230 | Leu | Gly | Ser | Ser | Ser | Gly | Gly |
| 1231 | | | 835 | | | | 840 |
| 1232 | | | | | | | 845 |
| 1233 | Thr | Ser | Leu | Asn | Gly | Gln | Cys |
| 1234 | | | 850 | | | | 855 |
| 1235 | | | | | | | 860 |
| 1236 | Met | Val | Pro | Asn | Gln | Tyr | Asn |
| 1237 | | | | | | 870 | |
| 1238 | | | | | | | 875 |
| 1239 | Pro | Leu | Ser | Thr | Gln | Ala | Pro |
| 1240 | | | | | | | 885 |
| 1241 | | | | | | | 890 |
| 1242 | Leu | His | Ser | Ser | Leu | Ala | Ala |
| 1243 | | | | | | | 900 |
| 1244 | | | | | | | 905 |
| 1245 | Gln | Gly | Leu | Pro | Ser | Thr | Arg |
| 1246 | | | 915 | | | | 920 |
| 1247 | | | | | | | 925 |
| 1248 | Thr | Gln | Gln | Val | Gln | Pro | Gln |
| 1249 | | | | | | | 930 |
| 1250 | | | | | | | 935 |
| 1251 | Gln | Pro | Ala | Asn | Ile | Gln | Gln |
| 1252 | | | | | | | 945 |
| 1253 | | | | | | | 950 |
| 1254 | Pro | Pro | Gln | Pro | His | Leu | Gly |
| 1255 | | | | | | | 965 |
| 1256 | | | | | | | 970 |
| 1257 | Gly | Arg | Ser | Phe | Leu | Ser | Gly |
| 1258 | | | | | | | 980 |
| 1259 | | | | | | | 985 |
| 1260 | Leu | Gly | Pro | Ser | Ser | Leu | Ala |
| 1261 | | | | | | | 995 |
| 1262 | | | | | | | 1000 |
| 1263 | Pro | Ala | Leu | Pro | Thr | Ser | Leu |
| 1264 | | | | | | | 1010 |
| 1265 | | | | | | | 1015 |
| 1266 | Ala | Ala | Gln | Phe | Leu | Thr | Pro |
| 1267 | | | | | | | 1025 |
| 1268 | | | | | | | 1030 |
| 1269 | Val | Asp | Asn | Thr | Pro | Ser | His |
| 1270 | | | | | | | 1045 |
| 1271 | | | | | | | 1050 |
| 1272 | Val | Met | Ile | Arg | Ser | Ser | Asp |
| 1273 | | | | | | | 1060 |
| 1274 | | | | | | | 1065 |
| 1275 | Glu | Ala | Pro | Asp | Ser | Trp | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:10:24

INPUT SET: S7068.raw

```

1276          1075
1277
1278 (2) INFORMATION FOR SEQ ID NO:12:
1279
1280 (i) SEQUENCE CHARACTERISTICS:
1281 (A) LENGTH: 4268 base pairs
1282 (B) TYPE: nucleic acid
1283 (C) STRANDEDNESS: double
1284 (D) TOPOLOGY: unknown
1285
1286 (ii) MOLECULE TYPE: cDNA
1287
1288
1289 (ix) FEATURE:
1290 (A) NAME/KEY: CDS
1291 (B) LOCATION: 2..1972
1292
1293
1294 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:
1295
1296 G GAG GTG GAT GTG TTA GAT GTG AAT GTC CGT GGC CCA GAT GGC TGC      46
1297   Glu Val Asp Val Leu Asp Val Asn Val Arg Gly Pro Asp Gly Cys
1298     1             5             10             15
1299
1300 ACC CCA TTG ATG TTG GCT TCT CTC CGA GGA GGC AGC TCA GAT TTG AGT      94
1301   Thr Pro Leu Met Leu Ala Ser Leu Arg Gly Gly Ser Ser Asp Leu Ser
1302             20             25             30
1303
1304 GAT GAA GAT GAA GAT GCA GAG GAC TCT TCT GCT AAC ATC ATC ACA GAC      142
1305   Asp Glu Asp Glu Asp Ala Glu Asp Ser Ser Ala Asn Ile Ile Thr Asp
1306             35             40             45
1307
1308 TTG GTC TAC CAG GGT GCC AGC CTC CAG GCC CAG ACA GAC CGG ACT GGT      190
1309   Leu Val Tyr Gln Gly Ala Ser Leu Gln Ala Gln Thr Asp Arg Thr Gly
1310             50             55             60
1311
1312 GAG ATG GCC CTG CAC CTT GCA GCC CGC TAC TCA CGG GCT GAT GCT GCC      238
1313   Glu Met Ala Leu His Leu Ala Ala Arg Tyr Ser Arg Ala Asp Ala Ala
1314             65             70             75
1315
1316 AAG CGT CTC CTG GAT GCA GGT GCA GAT GCC AAT GCC CAG GAC AAC ATG      286
1317   Lys Arg Leu Leu Asp Ala Gly Ala Asp Ala Asn Ala Gln Asp Asn Met
1318             80             85             90             95
1319
1320 GGC CGC TGT CCA CTC CAT GCT GCA GTG GCA GCT GAT GCC CAA GGT GTC      334
1321   Gly Arg Cys Pro Leu His Ala Ala Val Ala Ala Asp Ala Gln Gly Val
1322             100            105            110
1323
1324 TTC CAG ATT CTG ATT CGC AAC CGA GTA ACT GAT CTA GAT GCC AGG ATG      382
1325   Phe Gln Ile Leu Ile Arg Asn Arg Val Thr Asp Leu Asp Ala Arg Met
1326             115            120            125

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INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|
| 1327 | | | | | | | | | | | | | | | | | | |
| 1328 | AAT | GAT | GGT | ACT | ACA | CCC | CTG | ATC | CTG | GCT | GCC | CGC | CTG | GCT | GTG | GAG | | 430 |
| 1329 | Asn | Asp | Gly | Thr | Thr | Pro | Leu | Ile | Leu | Ala | Ala | Arg | Leu | Ala | Val | Glu | | |
| 1330 | | | 130 | | | | | 135 | | | | | 140 | | | | | |
| 1331 | | | | | | | | | | | | | | | | | | |
| 1332 | GGA | ATG | GTG | GCA | GAA | CTG | ATC | AAC | TGC | CAA | GCG | GAT | GTG | AAT | GCA | GTG | | 478 |
| 1333 | Gly | Met | Val | Ala | Glu | Leu | Ile | Asn | Cys | Gln | Ala | Asp | Val | Asn | Ala | Val | | |
| 1334 | | | 145 | | | | | 150 | | | | 155 | | | | | | |
| 1335 | | | | | | | | | | | | | | | | | | |
| 1336 | GAT | GAC | CAT | GGA | AAA | TCT | GCT | CTT | CAC | TGG | GCA | GCT | GCT | GTC | AAT | AAT | | 526 |
| 1337 | Asp | Asp | His | Gly | Lys | Ser | Ala | Leu | His | Trp | Ala | Ala | Ala | Val | Asn | Asn | | |
| 1338 | 160 | | | | | 165 | | | | | 170 | | | | | 175 | | |
| 1339 | | | | | | | | | | | | | | | | | | |
| 1340 | GTG | GAG | GCA | ACT | CTT | TTG | TTG | TTG | AAA | AAT | GGG | GCC | AAC | CGA | GAC | ATG | | 574 |
| 1341 | Val | Glu | Ala | Thr | Leu | Leu | Leu | Leu | Lys | Asn | Gly | Ala | Asn | Arg | Asp | Met | | |
| 1342 | | | | | 180 | | | | | 185 | | | | | 190 | | | |
| 1343 | | | | | | | | | | | | | | | | | | |
| 1344 | CAG | GAC | AAC | AAG | GAA | GAG | ACA | CCT | CTG | TTT | CTT | GCT | GCC | CGG | GAG | GGG | | 622 |
| 1345 | Gln | Asp | Asn | Lys | Glu | Glu | Thr | Pro | Leu | Phe | Leu | Ala | Ala | Arg | Glu | Gly | | |
| 1346 | | | | 195 | | | | | 200 | | | | | 205 | | | | |
| 1347 | | | | | | | | | | | | | | | | | | |
| 1348 | AGC | TAT | GAA | GCA | GCC | AAG | ATC | CTG | TTA | GAC | CAT | TTT | GCC | AAT | CGA | GAC | | 670 |
| 1349 | Ser | Tyr | Glu | Ala | Ala | Lys | Ile | Leu | Leu | Asp | His | Phe | Ala | Asn | Arg | Asp | | |
| 1350 | | | 210 | | | | | 215 | | | | | 220 | | | | | |
| 1351 | | | | | | | | | | | | | | | | | | |
| 1352 | ATC | ACA | GAC | CAT | ATG | GAT | CGT | CTT | CCC | CGG | GAT | GTG | GCT | CGG | GAT | CGC | | 718 |
| 1353 | Ile | Thr | Asp | His | Met | Asp | Arg | Leu | Pro | Arg | Asp | Val | Ala | Arg | Asp | Arg | | |
| 1354 | | | 225 | | | | 230 | | | | | 235 | | | | | | |
| 1355 | | | | | | | | | | | | | | | | | | |
| 1356 | ATG | CAC | CAT | GAC | ATT | GTG | CGC | CTT | CTG | GAT | GAA | TAC | AAT | GTG | ACC | CCA | | 766 |
| 1357 | Met | His | His | Asp | Ile | Val | Arg | Leu | Leu | Asp | Glu | Tyr | Asn | Val | Thr | Pro | | |
| 1358 | 240 | | | | | 245 | | | | | 250 | | | | | 255 | | |
| 1359 | | | | | | | | | | | | | | | | | | |
| 1360 | AGC | CCT | CCA | GGC | ACC | GTG | TTG | ACT | TCT | GCT | CTC | TCA | CCT | GTC | ATC | TGT | | 814 |
| 1361 | Ser | Pro | Pro | Gly | Thr | Val | Leu | Thr | Ser | Ala | Leu | Ser | Pro | Val | Ile | Cys | | |
| 1362 | | | | | 260 | | | | | 265 | | | | | 270 | | | |
| 1363 | | | | | | | | | | | | | | | | | | |
| 1364 | GGG | CCC | AAC | AGA | TCT | TTC | CTC | AGC | CTG | AAG | CAC | ACC | CCA | ATG | GGC | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:10:36

INPUT SET: S7068.raw

| | | | | | | | | |
|------|---|------|-----|-----|-----|--|-----|--|
| 1378 | 320 | | 325 | | 330 | | 335 | |
| 1379 | | | | | | | | |
| 1380 | CCT GTT GAT TCC CTA GAA TCT CCT CAC ACG TAT GTT TCC GAC ACC ACA | 1054 | | | | | | |
| 1381 | Pro Val Asp Ser Leu Glu Ser Pro His Thr Tyr Val Ser Asp Thr Thr | | | | | | | |
| 1382 | | 340 | 345 | 350 | | | | |
| 1383 | | | | | | | | |
| 1384 | TCC TCT CCA ATG ATT ACA TCC CCT GGG ATC TTA CAG GCC TCA CCC AAC | 1102 | | | | | | |
| 1385 | Ser Ser Pro Met Ile Thr Ser Pro Gly Ile Leu Gln Ala Ser Pro Asn | | | | | | | |
| 1386 | | 355 | 360 | 365 | | | | |
| 1387 | | | | | | | | |
| 1388 | CCT ATG TTG GCC ACT GCC GCC CCT CCT GCC CCA GTC CAT GCC CAG CAT | 1150 | | | | | | |
| 1389 | Pro Met Leu Ala Thr Ala Ala Pro Pro Ala Pro Val His Ala Gln His | | | | | | | |
| 1390 | | 370 | 375 | 380 | | | | |
| 1391 | | | | | | | | |
| 1392 | GCA CTA TCT TTT TCT AAC CTT CAT GAA ATG CAG CCT TTG GCA CAT GGG | 1198 | | | | | | |
| 1393 | Ala Leu Ser Phe Ser Asn Leu His Glu Met Gln Pro Leu Ala His Gly | | | | | | | |
| 1394 | | 385 | 390 | 395 | | | | |
| 1395 | | | | | | | | |
| 1396 | GCC AGC ACT GTG CTT CCC TCA GTG AGC CAG TTG CTA TCC CAC CAC CAC | 1246 | | | | | | |
| 1397 | Ala Ser Thr Val Leu Pro Ser Val Ser Gln Leu Leu Ser His His His | | | | | | | |
| 1398 | 400 | 405 | 410 | 415 | | | | |
| 1399 | | | | | | | | |
| 1400 | ATT GTG TCT CCA GGC AGT GGC AGT GCT GGA AGC TTG AGT AGG CTC CAT | 1294 | | | | | | |
| 1401 | Ile Val Ser Pro Gly Ser Gly Ser Ala Gly Ser Leu Ser Arg Leu His | | | | | | | |
| 1402 | | 420 | 425 | 430 | | | | |
| 1403 | | | | | | | | |
| 1404 | CCA GTC CCA GTC CCA GCA GAT TGG ATG AAC CGC ATG GAG GTG AAT GAG | 1342 | | | | | | |
| 1405 | Pro Val Pro Val Pro Ala Asp Trp Met Asn Arg Met Glu Val Asn Glu | | | | | | | |
| 1406 | | 435 | 440 | 445 | | | | |
| 1407 | | | | | | | | |
| 1408 | ACC CAG TAC AAT GAG ATG TTT GGT ATG GTC CTG GCT CCA GCT GAG GGC | 1390 | | | | | | |
| 1409 | Thr Gln Tyr Asn Glu Met Phe Gly Met Val Leu Ala Pro Ala Glu Gly | | | | | | | |
| 1410 | | 450 | 455 | 460 | | | | |
| 1411 | | | | | | | | |
| 1412 | ACC CAT CCT GGC ATA GCT CCC CAG AGC AGG CCA CCT GAA GGG AAG CAC | 1438 | | | | | | |
| 1413 | Thr His Pro Gly Ile Ala Pro Gln Ser Arg Pro Pro Glu Gly Lys His | | | | | | | |
| 1414 | | 465 | 470 | 475 | | | | |
| 1415 | | | | | | | | |
| 1416 | ATA ACC ACC CCT CGG GAG CCC TTG CCC CCC ATT GTG ACT TTC CAG CTC | 1486 | | | | | | |
| 1417 | Ile Thr Thr Pro Arg Glu Pro Leu Pro Pro Ile Val Thr Phe Gln Leu | | | | | | | |
| 1418 | 480 | 485 | 490 | 495 | | | | |
| 1419 | | | | | | | | |
| 1420 | ATC CCT AAA GGC AGT ATT GCC CAA CCA GCG GGG GCT CCC CAG CCT CAG | 1534 | | | | | | |
| 1421 | Ile Pro Lys Gly Ser Ile Ala Gln Pro Ala Gly Ala Pro Gln Pro Gln | | | | | | | |
| 1422 | | 500 | 505 | 510 | | | | |
| 1423 | | | | | | | | |
| 1424 | TCC ACC TGC CCT CCA GCT GTT GCG GGC CCC CTG CCC ACC ATG TAC CAG | 1582 | | | | | | |
| 1425 | Ser Thr Cys Pro Pro Ala Val Ala Gly Pro Leu Pro Thr Met Tyr Gln | | | | | | | |
| 1426 | | 515 | 520 | 525 | | | | |
| 1427 | | | | | | | | |
| 1428 | ATT CCA GAA ATG GCC CGT TTG CCC AGT GTG GCT TTC CCC ACT GCC ATG | 1630 | | | | | | |

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | |
|------|------------|------------|------------|------------|------------|------------|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| 1429 | Ile | Pro | Glu | Met | Ala | Arg | Leu | Pro | Ser | Val | Ala | Phe | Pro | Thr | Ala | Met | |
| 1430 | | | 530 | | | | | 535 | | | | | 540 | | | | |
| 1431 | | | | | | | | | | | | | | | | | |
| 1432 | ATG | CCC | CAG | CAG | GAC | GGG | CAG | GTA | GCT | CAG | ACC | ATT | CTC | CCA | GCC | TAT | 1678 |
| 1433 | Met | Pro | Gln | Gln | Asp | Gly | Gln | Val | Ala | Gln | Thr | Ile | Leu | Pro | Ala | Tyr | |
| 1434 | | 545 | | | | | 550 | | | | | 555 | | | | | |
| 1435 | | | | | | | | | | | | | | | | | |
| 1436 | CAT | CCT | TTC | CCA | GCC | TCT | GTG | GGC | AAG | TAC | CCC | ACA | CCC | CCT | TCA | CAG | 1726 |
| 1437 | His | Pro | Phe | Pro | Ala | Ser | Val | Gly | Lys | Tyr | Pro | Thr | Pro | Pro | Ser | Gln | |
| 1438 | 560 | | | | | 565 | | | | | 570 | | | | | 575 | |
| 1439 | | | | | | | | | | | | | | | | | |
| 1440 | CAC | AGT | TAT | GCT | TCC | TCA | AAT | GCT | GCT | GAG | CGA | ACA | CCC | AGT | CAC | AGT | 1774 |
| 1441 | His | Ser | Tyr | Ala | Ser | Ser | Asn | Ala | Ala | Glu | Arg | Thr | Pro | Ser | His | Ser | |
| 1442 | | | | | 580 | | | | | 585 | | | | | 590 | | |
| 1443 | | | | | | | | | | | | | | | | | |
| 1444 | GGT | CAC | CTC | CAG | GGT | GAG | CAT | CCC | TAC | CTG | ACA | CCA | TCC | CCA | GAG | TCT | 1822 |
| 1445 | Gly | His | Leu | Gln | Gly | Glu | His | Pro | Tyr | Leu | Thr | Pro | Ser | Pro | Glu | Ser | |
| 1446 | | | | 595 | | | | | 600 | | | | | 605 | | | |
| 1447 | | | | | | | | | | | | | | | | | |
| 1448 | CCT | GAC | CAG | TGG | TCA | AGT | TCA | TCA | CCC | CAC | TCT | GCT | TCT | GAC | TGG | TCA | 1870 |
| 1449 | Pro | Asp | Gln | Trp | Ser | Ser | Ser | Ser | Pro | His | Ser | Ala | Ser | Asp | Trp | Ser | |
| 1450 | | | 610 | | | | | 615 | | | | | 620 | | | | |
| 1451 | | | | | | | | | | | | | | | | | |
| 1452 | GAT | GTG | ACC | ACC | AGC | CCT | ACC | CCT | GGG | GGT | GCT | GGA | GGA | GGT | CAG | CGG | 1918 |
| 1453 | Asp | Val | Thr | Thr | Ser | Pro | Thr | Pro | Gly | Gly | Ala | Gly | Gly | Gly | Gln | Arg | |
| 1454 | | 625 | | | | | 630 | | | | | 635 | | | | | |
| 1455 | | | | | | | | | | | | | | | | | |
| 1456 | GGA | CCT | GGG | ACA | CAC | ATG | TCT | GAG | CCA | CCA | CAC | AAC | AAC | ATG | CAG | GTT | 1966 |
| 1457 | Gly | Pro | Gly | Thr | His | Met | Ser | Glu | Pro | Pro | His | Asn | Asn | Met | Gln | Val | |
| 1458 | 640 | | | | | 645 | | | | | 650 | | | | 655 | | |
| 1459 | | | | | | | | | | | | | | | | | |
| 1460 | TAT | GCG | TGAGAGAGTC | CACCTCCAGT | GTAGAGACAT | AACTGACTTT | TGTAATGCT | | | | | | | | | | 2022 |
| 1461 | Tyr | Ala | | | | | | | | | | | | | | | |
| 1462 | | | | | | | | | | | | | | | | | |
| 1463 | | | | | | | | | | | | | | | | | |
| 1464 | GCTGAGGAAC | AAATGAAGGT | CATCCGGGAG | AGAAATGAAG | AAATCTCTGG | AGCCAGCTTC | | | | | | | | | | | 2082 |
| 1465 | | | | | | | | | | | | | | | | | |
| 1466 | TAGAGGTAGG | AAAGAGAAGA | TGTTCTTATT | CAGATAATGC | AAGAGAAGCA | ATTCGTCAGT | | | | | | | | | | | 2142 |
| 1467 | | | | | | | | | | | | | | | | | |
| 1468 | TTCACTGGGT | ATCTGCAAGG | CTTATTGATT | ATTCTAATCT | AATAAGACAA | GTTTGTGGAA | | | | | | | | | | | 2202 |
| 1469 | | | | | | | | | | | | | | | | | |

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:10:49

INPUT SET: S7068.raw

| | | | | | | | |
|------|------------|------------|-------------|------------|------------|-------------|------|
| 1480 | CTTTGTGCTT | TTGATCATT | TGGCCCATGA | AAGCAACTTT | GGTCTCCTTT | CCCCTCCTGT | 2562 |
| 1481 | | | | | | | |
| 1482 | CTTCCCGGTA | TCCCTTGGAG | TCTCACAAGG | TTTACTTTGG | TATGGTTCTC | AGCACAAACC | 2622 |
| 1483 | | | | | | | |
| 1484 | TTTCAAGTAT | GTTGTTTCTT | TGGAAAATGG | ACATACTGTA | TTGTGTTCTC | CTGCATATAT | 2682 |
| 1485 | | | | | | | |
| 1486 | CATTCTGGA | GAGAGAAGGG | GAGAAGAATA | CTTTTCTTCA | ACAAATTTTG | GGGGCAGGAG | 2742 |
| 1487 | | | | | | | |
| 1488 | ATCCCTTCAA | GAGGCTGCAC | CTTAATTTTT | CTTGTCTGTG | TGCAGGTCTT | CATATAAACT | 2802 |
| 1489 | | | | | | | |
| 1490 | TTACCAGGAA | GAAGGGTGTG | AGTTTGTGTG | TTTTCTGTGT | ATGGGCCTGG | TCAGTGTAAG | 2862 |
| 1491 | | | | | | | |
| 1492 | GTTTTATCCT | TGATAGTCTA | GTTACTATGA | CCCTCCCCAC | TTTTTTAAAA | CCAGAAAAAG | 2922 |
| 1493 | | | | | | | |
| 1494 | GTTTGGAATG | TTGGAATGAC | CAAGAGACAA | GTTAACTCGT | GCAAGAGCCA | GTTACCCACC | 2982 |
| 1495 | | | | | | | |
| 1496 | CACAGGTCCC | CCTACTTCCT | GCCAAGCATT | CCATTGACTG | CCTGTATGGA | ACACATTTGT | 3042 |
| 1497 | | | | | | | |
| 1498 | CCCAGATCTG | AGCATTCTAG | GCCTGTTTCA | CTCACTCACC | CAGCATATGA | AACTAGTCTT | 3102 |
| 1499 | | | | | | | |
| 1500 | AACTGTTGAG | CCTTTCTTTT | CATATCCACA | GAAGACACTG | TCTCAAATGT | TGTACCCTTG | 3162 |
| 1501 | | | | | | | |
| 1502 | CCATTTAGGA | CTGAACTTTC | CTTAGCCCCA | GGGACCCAGT | GACAGTTGTC | TTCCGTTTGT | 3222 |
| 1503 | | | | | | | |
| 1504 | CAGATGATCA | GTCTCTACTG | ATTATCTTGC | TGCTTAAAGG | CCTGCTCACC | AATCTTTCTT | 3282 |
| 1505 | | | | | | | |
| 1506 | TCACACCGTG | TGGTCCGTGT | TACTGGTATA | CCCAGTATGT | TCTCACTGAA | GACATGGACT | 3342 |
| 1507 | | | | | | | |
| 1508 | TTATATGTTT | AAGTGCAGGA | ATTGGAAAAGT | TGGACTTGTT | TTCTATGATC | CAAAACAGCC | 3402 |
| 1509 | | | | | | | |
| 1510 | CTATAAGAAG | GTTGGAAAAG | GAGGAACTAT | ATAGCAGCCT | TTGCTATTTT | CTGCTACCAT | 3462 |
| 1511 | | | | | | | |
| 1512 | TTCTTTTCCT | CTGAAGCGGC | CATGACATT | CCTTTGGCAA | CTAACGTAGA | AACTCAACAG | 3522 |
| 1513 | | | | | | | |
| 1514 | AACATTTTCC | TTTCCTAGAG | TCACCTTTTA | GATGATAATG | GACAACTATA | GACTTGCTCA | 3582 |
| 1515 | | | | | | | |
| 1516 | TTGTTTCTG | TGATTGCCCC | TCACCTGAAT | CCACTCTCTG | TATTCATGCT | CTTGGCAATT | 3642 |
| 1517 | | | | | | | |
| 1518 | TCTTTGACTT | TCTTTTAAGG | GCAGAAGCAT | TTTAGTTAAT | TGTAGATAAA | GAATAGTTTT | 3702 |
| 1519 | | | | | | | |
| 1520 | CTTCCTCTTC | TCCTTGGGCC | AGTTAATAAT | TGGTCCATGG | CTACACTGCA | ACTTCCGTCC | 3762 |
| 1521 | | | | | | | |
| 1522 | AGTGCTGTGA | TGCCCATGAC | ACCTGCAAAA | TAAGTTCTGC | CTGGGCATTT | TGTAGATATT | 3822 |
| 1523 | | | | | | | |
| 1524 | AACAGGTGAA | TTCCCGACTC | TTTTGGTTTG | AATGACAGTT | CTCATTCCTT | CTATGGCTGC | 3882 |
| 1525 | | | | | | | |
| 1526 | AAGTATGCAT | CAGTGCTTCC | CACTTACCTG | ATTTGTCTGT | CGGTGGCCCC | ATATGGAAAC | 3942 |
| 1527 | | | | | | | |
| 1528 | CCTGCGTGTC | TGTTGGCATA | ATAGTTTACA | AATGGTTTTT | TCAGTCCTAT | CCAAATTTAT | 4002 |
| 1529 | | | | | | | |
| 1530 | TGAACCAACA | AAAATAATTA | CTTCTGCCCT | GAGATAAGCA | GATTAAGTTT | GTTTCATTCTC | 4062 |

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:10:55

INPUT SET: S7068.raw

1531
1532 TGCTTTATTC TCTCCATGTG GCAACATTCT GTCAGCCTCT TTCATAGTGT GCAAACATTT 4122
1533
1534 TATCATTCTA AATGGTGACT CTCTGCCCTT GGACCCATTT ATTATTCACA GATGGGGAGA 4182
1535
1536 ACCTATCTGC ATGGACCCTC ACCATCCTCT GTGCAGCACA CACAGTGCAG GGAGCCAGTG 4242
1537
1538 GCGATGGCGA TGACTTTCTT CCCCTG 4268
1539
1540
1541 (2) INFORMATION FOR SEQ ID NO:13:
1542
1543 (i) SEQUENCE CHARACTERISTICS:
1544 (A) LENGTH: 657 amino acids
1545 (B) TYPE: amino acid
1546 (D) TOPOLOGY: unknown
1547
1548 (ii) MOLECULE TYPE: protein
1549
1550 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:
1551
1552 Glu Val Asp Val Leu Asp Val Asn Val Arg Gly Pro Asp Gly Cys Thr
1553 1 5 10 15
1554
1555 Pro Leu Met Leu Ala Ser Leu Arg Gly Gly Ser Ser Asp Leu Ser Asp
1556 20 25 30
1557
1558 Glu Asp Glu Asp Ala Glu Asp Ser Ser Ala Asn Ile Ile Thr Asp Leu
1559 35 40 45
1560
1561 Val Tyr Gln Gly Ala Ser Leu Gln Ala Gln Thr Asp Arg Thr Gly Glu
1562 50 55 60
1563
1564 Met Ala Leu His Leu Ala Ala Arg Tyr Ser Arg Ala Asp Ala Ala Lys
1565 65 70 75 80
1566
1567 Arg Leu Leu Asp Ala Gly Ala Asp Ala Asn Ala Gln Asp Asn Met Gly
1568 85 90 95
1569
1570 Arg Cys Pro Leu His Ala Ala Val Ala Ala Asp Ala Gln Gly Val Phe
1571 100 105 110
1572
1573 Gln Ile Leu Ile Arg Asn Arg Val Thr Asp Leu Asp Ala Arg Met Asn
1574 115 120 125
1575
1576 Asp Gly Thr Thr Pro Leu Ile Leu Ala Ala Arg Leu Ala Val Glu Gly
1577 130 135 140
1578
1579 Met Val Ala Glu Leu Ile Asn Cys Gln Ala Asp Val Asn Ala Val Asp
1580 145 150 155 160
1581

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:11:02

INPUT SET: S7068.raw

```

1582  Asp His Gly Lys Ser Ala Leu His Trp Ala Ala Ala Val Asn Asn Val
1583                165                170                175
1584
1585  Glu Ala Thr Leu Leu Leu Leu Lys Asn Gly Ala Asn Arg Asp Met Gln
1586                180                185                190
1587
1588  Asp Asn Lys Glu Glu Thr Pro Leu Phe Leu Ala Ala Arg Glu Gly Ser
1589                195                200                205
1590
1591  Tyr Glu Ala Ala Lys Ile Leu Leu Asp His Phe Ala Asn Arg Asp Ile
1592                210                215                220
1593
1594  Thr Asp His Met Asp Arg Leu Pro Arg Asp Val Ala Arg Asp Arg Met
1595  225                230                235                240
1596
1597  His His Asp Ile Val Arg Leu Leu Asp Glu Tyr Asn Val Thr Pro Ser
1598                245                250                255
1599
1600  Pro Pro Gly Thr Val Leu Thr Ser Ala Leu Ser Pro Val Ile Cys Gly
1601                260                265                270
1602
1603  Pro Asn Arg Ser Phe Leu Ser Leu Lys His Thr Pro Met Gly Lys Lys
1604                275                280                285
1605
1606  Ser Arg Arg Pro Ser Ala Lys Ser Thr Met Pro Thr Ser Leu Pro Asn
1607                290                295                300
1608
1609  Leu Ala Lys Glu Ala Lys Asp Ala Lys Gly Ser Arg Arg Lys Lys Ser
1610  305                310                315                320
1611
1612  Leu Ser Glu Lys Val Gln Leu Ser Glu Ser Ser Val Thr Leu Ser Pro
1613                325                330                335
1614
1615  Val Asp Ser Leu Glu Ser Pro His Thr Tyr Val Ser Asp Thr Thr Ser
1616                340                345                350
1617
1618  Ser Pro Met Ile Thr Ser Pro Gly Ile Leu Gln Ala Ser Pro Asn Pro
1619                355                360                365
1620
1621  Met Leu Ala Thr Ala Ala Pro Pro Ala Pro Val His Ala Gln His Ala
1622                370                375                380
1623
1624  Leu Ser Phe Ser Asn Leu His Glu Met Gln Pro Leu Ala His Gly Ala
1625  385                390                395                400
1626
1627  Ser Thr Val Leu Pro Ser Val Ser Gln Leu Leu Ser His His His Ile
1628                405                410                415
1629
1630  Val Ser Pro Gly Ser Gly Ser Ala Gly Ser Leu Ser Arg Leu His Pro
1631                420                425                430
1632

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RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:11:08

INPUT SET: S7068.raw

```

1633 Val Pro Val Pro Ala Asp Trp Met Asn Arg Met Glu Val Asn Glu Thr
1634           435                      440                      445
1635
1636 Gln Tyr Asn Glu Met Phe Gly Met Val Leu Ala Pro Ala Glu Gly Thr
1637           450                      455                      460
1638
1639 His Pro Gly Ile Ala Pro Gln Ser Arg Pro Pro Glu Gly Lys His Ile
1640           465                      470                      475                      480
1641
1642 Thr Thr Pro Arg Glu Pro Leu Pro Pro Ile Val Thr Phe Gln Leu Ile
1643           485                      490                      495
1644
1645 Pro Lys Gly Ser Ile Ala Gln Pro Ala Gly Ala Pro Gln Pro Gln Ser
1646           500                      505                      510
1647
1648 Thr Cys Pro Pro Ala Val Ala Gly Pro Leu Pro Thr Met Tyr Gln Ile
1649           515                      520                      525
1650
1651 Pro Glu Met Ala Arg Leu Pro Ser Val Ala Phe Pro Thr Ala Met Met
1652           530                      535                      540
1653
1654 Pro Gln Gln Asp Gly Gln Val Ala Gln Thr Ile Leu Pro Ala Tyr His
1655           545                      550                      555                      560
1656
1657 Pro Phe Pro Ala Ser Val Gly Lys Tyr Pro Thr Pro Pro Ser Gln His
1658           565                      570                      575
1659
1660 Ser Tyr Ala Ser Ser Asn Ala Ala Glu Arg Thr Pro Ser His Ser Gly
1661           580                      585                      590
1662
1663 His Leu Gln Gly Glu His Pro Tyr Leu Thr Pro Ser Pro Glu Ser Pro
1664           595                      600                      605
1665
1666 Asp Gln Trp Ser Ser Ser Ser Pro His Ser Ala Ser Asp Trp Ser Asp
1667           610                      615                      620
1668
1669 Val Thr Thr Ser Pro Thr Pro Gly Gly Ala Gly Gly Gly Gln Arg Gly
1670           625                      630                      635                      640
1671
1672 Pro Gly Thr His Met Ser Glu Pro Pro His Asn Asn Met Gln Val Tyr
1673           645                      650                      655
1674
1675 Ala
1676
1677
1678 (2) INFORMATION FOR SEQ ID NO:14:
1679
1680 (i) SEQUENCE CHARACTERISTICS:
1681 (A) LENGTH: 77 amino acids
1682 (B) TYPE: amino acid
1683 (C) STRANDEDNESS: single

```

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:11:14

INPUT SET: S7068.raw

1684 (D) TOPOLOGY: unknown
1685
1686 (ii) MOLECULE TYPE: peptide
1687
1688
1689
1690 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:
1691
1692 Glu Asp Ile Asp Glu Cys Asp Gln Gly Ser Pro Cys Glu His Asn Gly
1693 1 5 10 15
1694
1695 Ile Cys Val Asn Thr Pro Gly Ser Tyr Arg Cys Asn Cys Ser Gln Gly
1696 20 25 30
1697
1698 Phe Thr Gly Pro Arg Cys Glu Thr Asn Ile Asn Glu Cys Glu Ser His
1699 35 40 45
1700
1701 Pro Cys Gln Asn Glu Gly Ser Cys Leu Asp Asp Pro Gly Thr Phe Arg
1702 50 55 60
1703
1704 Cys Val Cys Met Pro Gly Phe Thr Gly Thr Gln Cys Glu
1705 65 70 75
1706
1707 (2) INFORMATION FOR SEQ ID NO:15:
1708
1709 (i) SEQUENCE CHARACTERISTICS:
1710 (A) LENGTH: 78 amino acids
1711 (B) TYPE: amino acid
1712 (C) STRANDEDNESS: single
1713 (D) TOPOLOGY: unknown
1714
1715 (ii) MOLECULE TYPE: peptide
1716
1717
1718
1719 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:
1720
1721 Asn Asp Val Asp Glu Cys Ser Leu Gly Ala Asn Pro Cys Glu His Gly
1722 1 5 10 15
1723
1724 Gly Arg Cys Thr Asn Thr Leu Gly Ser Phe Gln Cys Asn Cys Pro Gln
1725 20 25 30
1726
1727 Gly Tyr Ala Gly Pro Arg Cys Glu Ile Asp Val Asn Glu Cys Leu Ser
1728 35 40 45
1729
1730 Asn Pro Cys Gln Asn Asp Ser Thr Cys Leu Asp Gln Ile Gly Glu Phe
1731 50 55 60
1732
1733 Gln Cys Ile Cys Met Pro Gly Tyr Glu Gly Leu Tyr Cys Glu
1734 65 70 75

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590DATE: 12/16/93
TIME: 13:11:20

INPUT SET: S7068.raw

1735

1736

1737 (2) INFORMATION FOR SEQ ID NO:16:

1738

1739 (i) SEQUENCE CHARACTERISTICS:

1740 (A) LENGTH: 654 amino acids

1741 (B) TYPE: amino acid

1742 (C) STRANDEDNESS: single

1743 (D) TOPOLOGY: unknown

1744

1745 (ii) MOLECULE TYPE: peptide

1746

1747

1748

1749

1750 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

1751

1752 Thr Pro Pro Gln Gly Glu Ile Glu Ala Asp Cys Met Asp Val Asn Val
1753 1 5 10 15

1754

1755 Arg Gly Pro Asp Gly Phe Thr Pro Leu Met Ile Ala Ser Cys Ser Gly
1756 20 25 30

1757

1758 Gly Gly Leu Glu Thr Gly Asn Ser Glu Glu Glu Glu Asp Ala Ser Ala
1759 35 40 45

1760

1761 Asn Met Ile Ser Asp Phe Ile Gly Gln Gly Ala Gln Leu His Asn Gln
1762 50 55 60

1763

1764 Thr Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala Ala Arg Tyr Ala
1765 65 70 75 80

1766

1767 Arg Ala Asp Ala Ala Lys Arg Leu Leu Glu Ser Ser Ala Asp Ala Asn
1768 85 90 95

1769

1770 Val Gln Asp Asn Met Gly Arg Thr Pro Leu His Ala Ala Val Ala Ala
1771 100 105 110

1772

1773 Asp Ala Gln Gly Val Phe Gln Ile Leu Ile Arg Asn Arg Ala Thr Asp
1774 115 120 125

1775

1776 Leu Asp Ala Arg Met Phe Asp Gly Thr Thr Pro Leu Ile Leu Ala Ala
1777 130 135 140

1778

1779 Arg Leu Ala Val Glu Gly Met Val Glu Glu Leu Ile Asn Ala His Ala
1780 145 150 155 160

1781

1782 Asp Val Asn Ala Val Asp Glu Phe Gly Lys Ser Ala Leu His Trp Ala
1783 165 170 175

1784

1785 Ala Ala Val Asn Asn Val Asp Ala Ala Ala Val Leu Leu Lys Asn Ser

DATE: 12/16/93
TIME: 13:11:27

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 1786 | | | | | 180 | | | | 185 | | | | 190 | | | | |
| 1787 | | | | | | | | | | | | | | | | | |
| 1788 | Ala | Asn | Lys | Asp | Met | Gln | Asn | Asn | Lys | Glu | Glu | Thr | Ser | Leu | Phe | Leu | |
| 1789 | 195 | | | | 200 | | | | 205 | | | | | | | | |
| 1790 | | | | | | | | | | | | | | | | | |
| 1791 | Ala | Ala | Arg | Glu | Gly | Ser | Tyr | Glu | Thr | Ala | Lys | Val | Leu | Leu | Asp | His | |
| 1792 | 210 | | | | 215 | | | | 220 | | | | | | | | |
| 1793 | | | | | | | | | | | | | | | | | |
| 1794 | Tyr | Ala | Asn | Arg | Asp | Ile | Thr | Asp | His | Met | Asp | Arg | Leu | Pro | Arg | Asp | |
| 1795 | 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| 1796 | | | | | | | | | | | | | | | | | |
| 1797 | Ile | Ala | Gln | Glu | Arg | Met | His | His | Asp | Ile | Val | His | Leu | Leu | Asp | Glu | |
| 1798 | | | | | 245 | | | | | 250 | | | | | 255 | | |
| 1799 | | | | | | | | | | | | | | | | | |
| 1800 | Tyr | Asn | Leu | Val | Lys | Ser | Pro | Thr | Leu | His | Asn | Gly | Pro | Leu | Gly | Ala | |
| 1801 | | | | | 260 | | | | | 265 | | | | | 270 | | |
| 1802 | | | | | | | | | | | | | | | | | |
| 1803 | Thr | Thr | Leu | Ser | Pro | Pro | Ile | Cys | Ser | Pro | Asn | Gly | Tyr | Met | Gly | Asn | |
| 1804 | | | | | 275 | | | | | 280 | | | | | 285 | | |
| 1805 | | | | | | | | | | | | | | | | | |
| 1806 | Met | Lys | Pro | Ser | Val | Gln | Ser | Lys | Lys | Ala | Arg | Lys | Pro | Ser | Ile | Lys | |
| 1807 | 290 | | | | | | 295 | | | | | 300 | | | | | |
| 1808 | | | | | | | | | | | | | | | | | |
| 1809 | Gly | Asn | Gly | Cys | Lys | Glu | Ala | Lys | Glu | Leu | Lys | Ala | Arg | Arg | Lys | Lys | |
| 1810 | 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| 1811 | | | | | | | | | | | | | | | | | |
| 1812 | Ser | Gln | Asp | Gly | Lys | Thr | Thr | Leu | Leu | Asp | Ser | Gly | Ser | Ser | Gly | Val | |
| 1813 | | | | | 325 | | | | | 330 | | | | | 335 | | |
| 1814 | | | | | | | | | | | | | | | | | |
| 1815 | Leu | Ser | Pro | Val | Asp | Ser | Leu | Glu | Ser | Thr | His | Gly | Tyr | Leu | Ser | Asp | |
| 1816 | | | | | 340 | | | | | 345 | | | | | 350 | | |
| 1817 | | | | | | | | | | | | | | | | | |
| 1818 | Val | Ser | Ser | Pro | Pro | Leu | Met | Thr | Ser | Pro | Phe | Gln | Gln | Ser | Pro | Ser | |
| 1819 | | | | | 355 | | | | | 360 | | | | | 365 | | |
| 1820 | | | | | | | | | | | | | | | | | |
| 1821 | Met | Pro | Leu | Asn | His | Leu | Thr | Ser | Met | Pro | Glu | Ser | Gln | Leu | Gly | Met | |
| 1822 | 370 | | | | | | 375 | | | | | 380 | | | | | |
| 1823 | | | | | | | | | | | | | | | | | |
| 1824 | Asn | His | Ile | Asn | Met | Ala | Thr | Lys | Gln | Glu | Met | Ala | Ala | Gly | Ser | Asn | |
| 1825 | 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| 1826 | | | | | | | | | | | | | | | | | |
| 1827 | Arg | Met | Ala | Phe | Asp | Ala | Met | Val | Pro | Arg | Leu | Thr | His | Leu | Asn | Ala | |
| 1828 | | | | | 405 | | | | | 410 | | | | | 415 | | |
| 1829 | | | | | | | | | | | | | | | | | |
| 1830 | Ser | Ser | Pro | Asn | Thr | Ile | Met | Ser | Asn | Gly | Ser | Met | His | Phe | Thr | Val | |
| 1831 | | | | | 420 | | | | | 425 | | | | | 430 | | |
| 1832 | | | | | | | | | | | | | | | | | |
| 1833 | Gly | Gly | Ala | Pro | Thr | Met | Asn | Ser | Gln | Cys | Asp | Trp | Leu | Ala | Arg | Leu | |
| 1834 | | | | | 435 | | | | | 440 | | | | | 445 | | |
| 1835 | | | | | | | | | | | | | | | | | |
| 1836 | Gln | Asn | Gly | Met | Val | Gln | Asn | Gln | Tyr | Asp | Pro | Ile | Arg | Asn | Gly | Ile | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:11:34

INPUT SET: S7068.raw

| | | | |
|------|---|-----|-------------|
| 1837 | 450 | 455 | 460 |
| 1838 | | | |
| 1839 | Gln Gln Gly Asn Ala Gln Gln Ala Gln Ala Leu Gln His Gly Leu Met | | |
| 1840 | 465 | 470 | 475 480 |
| 1841 | | | |
| 1842 | Thr Ser Leu His Asn Gly Leu Pro Ala Thr Thr Leu Ser Gln Met Met | | |
| 1843 | | 485 | 490 495 |
| 1844 | | | |
| 1845 | Thr Tyr Gln Ala Met Pro Asn Thr Arg Leu Ala Asn Gln Pro His Leu | | |
| 1846 | | 500 | 505 510 |
| 1847 | | | |
| 1848 | Met Gln Ala Gln Gln Met Gln Gln Gln Gln Asn Leu Gln Leu His Gln | | |
| 1849 | | 515 | 520 525 |
| 1850 | | | |
| 1851 | Ser Met Gln Gln Gln His His Asn Ser Ser Thr Thr Ser Thr His Ile | | |
| 1852 | | 530 | 535 540 |
| 1853 | | | |
| 1854 | Asn Ser Pro Phe Cys Ser Ser Asp Ile Ser Gln Thr Asp Leu Gln Gln | | |
| 1855 | | 545 | 550 555 560 |
| 1856 | | | |
| 1857 | Met Ser Ser Asn Asn Ile His Ser Val Met Pro Gln Asp Thr Gln Ile | | |
| 1858 | | 565 | 570 575 |
| 1859 | | | |
| 1860 | Phe Ala Ala Ser Leu Pro Ser Asn Leu Thr Gln Ser Met Thr Thr Ala | | |
| 1861 | | 580 | 585 590 |
| 1862 | | | |
| 1863 | Gln Phe Leu Thr Pro Pro Ser Gln His Ser Tyr Ser Ser Pro Met Asp | | |
| 1864 | | 595 | 600 605 |
| 1865 | | | |
| 1866 | Asn Thr Pro Ser His Gln Leu Gln Val Pro Asp His Pro Phe Leu Thr | | |
| 1867 | | 610 | 615 620 |
| 1868 | | | |
| 1869 | Pro Ser Pro Glu Ser Pro Asp Gln Trp Ser Ser Ser Ser Pro His Ser | | |
| 1870 | | 625 | 630 635 640 |
| 1871 | | | |
| 1872 | Asn Met Ser Asp Trp Ser Glu Gly Ile Ser Ser Pro Pro Thr | | |
| 1873 | | 645 | 650 |
| 1874 | | | |

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 666 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:11:41

INPUT SET: S7068.raw

```

1888
1889   Thr Pro Pro Gln Gly Glu Val Asp Ala Asp Cys Met Asp Val Asn Val
1890   1          5          10          15
1891
1892   Arg Gly Pro Asp Gly Phe Thr Pro Leu Met Ile Ala Ser Cys Ser Gly
1893          20          25          30
1894
1895   Gly Gly Leu Glu Thr Gly Asn Ser Glu Glu Glu Glu Asp Ala Pro Ala
1896          35          40          45
1897
1898   Val Ile Ser Asp Phe Ile Tyr Gln Gly Ala Ser Leu His Asn Gln Thr
1899          50          55          60
1900
1901   Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala Ala Arg Tyr Ser Arg
1902   65          70          75          80
1903
1904   Ser Asp Ala Ala Lys Arg Leu Leu Glu Ala Ser Ala Asp Ala Asn Ile
1905          85          90          95
1906
1907   Gln Asp Asn Met Gly Arg Thr Pro Leu His Ala Ala Val Ser Ala Asp
1908          100          105          110
1909
1910   Ala Gln Gly Val Phe Gln Ile Leu Leu Arg Asn Arg Ala Thr Asp Leu
1911          115          120          125
1912
1913   Asp Ala Arg Met His Asp Gly Thr Thr Pro Leu Ile Leu Ala Ala Arg
1914          130          135          140
1915
1916   Leu Ala Val Glu Gly Met Leu Glu Asp Leu Ile Asn Ser His Ala Asp
1917   145          150          155          160
1918
1919   Val Asn Ala Val Asp Asp Leu Gly Lys Ser Ala Leu His Trp Ala Ala
1920          165          170          175
1921
1922   Ala Val Asn Asn Val Asp Ala Ala Val Val Leu Leu Lys Asn Gly Ala
1923          180          185          190
1924
1925   Asn Lys Asp Met Gln Asn Asn Lys Glu Glu Thr Pro Leu Phe Leu Ala
1926          195          200          205
1927
1928   Ala Arg Glu Gly Ser Tyr Glu Thr Ala Lys Val Leu Leu Asp His Phe
1929          210          215          220
1930
1931   Ala Asn Arg Asp Ile Thr Asp His Met Asp Arg Leu Pro Arg Asp Ile
1932   225          230          235          240
1933
1934   Ala Gln Glu Arg Met His His Asp Ile Val Arg Leu Leu Asp Glu Tyr
1935          245          250          255
1936
1937   Asn Leu Val Arg Ser Pro Gln Leu His Gly Thr Ala Leu Gly Gly Thr
1938          260          265          270

```

RAW SEQUENCE LISTING PATENT APPLICATION *US/08/083,590*

DATE: 12/16/93
TIME: 13:11:48

INPUT SET: S7068.raw

| | |
|------|---|
| 1939 | |
| 1940 | Pro Thr Leu Ser Pro Thr Leu Cys Ser Pro Asn Gly Tyr Leu Gly Asn |
| 1941 | 275 280 285 |
| 1942 | |
| 1943 | Leu Lys Ser Ala Thr Gln Gly Lys Lys Ala Arg Lys Pro Ser Thr Lys |
| 1944 | 290 295 300 |
| 1945 | |
| 1946 | Gly Leu Ala Cys Ser Ser Lys Glu Ala Lys Asp Leu Lys Ala Arg Arg |
| 1947 | 305 310 315 320 |
| 1948 | |
| 1949 | Lys Lys Ser Gln Asp Gly Lys Gly Cys Leu Leu Asp Ser Ser Ser Met |
| 1950 | 325 330 335 |
| 1951 | |
| 1952 | Leu Ser Pro Val Asp Ser Leu Glu Ser Pro His Gly Tyr Leu Ser Asp |
| 1953 | 340 345 350 |
| 1954 | |
| 1955 | Val Ala Ser Pro Pro Leu Pro Ser Pro Phe Gln Gln Ser Pro Ser Met |
| 1956 | 355 360 365 |
| 1957 | |
| 1958 | Pro Leu Ser His Leu Pro Gly Met Pro Asp Thr His Leu Gly Ile Ser |
| 1959 | 370 375 380 |
| 1960 | |
| 1961 | His Leu Asn Val Ala Ala Lys Pro Glu Met Ala Ala Leu Ala Gly Gly |
| 1962 | 385 390 395 400 |
| 1963 | |
| 1964 | Ser Arg Leu Ala Phe Glu Pro Pro Pro Pro Arg Leu Ser His Leu Pro |
| 1965 | 405 410 415 |
| 1966 | |
| 1967 | Val Ala Ser Ser Ala Ser Thr Val Leu Ser Thr Asn Gly Thr Gly Ala |
| 1968 | 420 425 430 |
| 1969 | |
| 1970 | Met Asn Phe Thr Val Gly Ala Pro Ala Ser Leu Asn Gly Gln Cys Glu |
| 1971 | 435 440 445 |
| 1972 | |
| 1973 | Trp Leu Pro Arg Leu Gln Asn Gly Met Val Pro Ser Gln Tyr Asn Pro |
| 1974 | 450 455 460 |
| 1975 | |
| 1976 | Leu Arg Pro Gly Val Thr Pro Gly Thr Leu Ser Thr Gln Ala Ala Gly |
| 1977 | 465 470 475 480 |
| 1978 | |
| 1979 | Leu Gln His Gly Met Met Ser Pro Ile His Ser Ser Leu Ser Thr Asn |
| 1980 | 485 490 495 |
| 1981 | |
| 1982 | Thr Leu Ser Pro Ile Ile Tyr Gln Gly Leu Pro Asn Thr Arg Leu Ala |
| 1983 | 500 505 510 |
| 1984 | |
| 1985 | Thr Gln Pro His Leu Val Gln Thr Gln Gln Val Gln Pro Gln Asn Leu |
| 1986 | 515 520 525 |
| 1987 | |
| 1988 | Gln Ile Gln Pro Gln Asn Leu Gln Pro Pro Ser Gln Pro His Leu Ser |
| 1989 | 530 535 540 |

INPUT SET: S7068.raw

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 681 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEO ID NO:18:

[illegible]

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:12:01

INPUT SET: S7068.raw

| | |
|------|---|
| 2041 | Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala Ala Arg Tyr Ser Arg |
| 2042 | 65 70 75 80 |
| 2043 | |
| 2044 | Ser Asp Ala Ala Lys Arg Leu Leu Glu Ala Ser Ala Asp Ala Asn Ile |
| 2045 | 85 90 95 |
| 2046 | |
| 2047 | Gln Asp Asn Met Gly Arg Thr Pro Leu His Ala Ala Val Ser Ala Asp |
| 2048 | 100 105 110 |
| 2049 | |
| 2050 | Ala Gln Gly Val Phe Gln Ile Leu Ile Arg Asn Arg Ala Thr Asp Leu |
| 2051 | 115 120 125 |
| 2052 | |
| 2053 | Asp Ala Arg Met His Asp Gly Thr Thr Pro Leu Ile Leu Ala Ala Arg |
| 2054 | 130 135 140 |
| 2055 | |
| 2056 | Leu Ala Val Glu Gly Met Leu Glu Asp Leu Ile Asn Ser His Ala Asp |
| 2057 | 145 150 155 160 |
| 2058 | |
| 2059 | Val Asn Ala Val Asp Asp Leu Gly Lys Ser Ala Leu His Trp Ala Ala |
| 2060 | 165 170 175 |
| 2061 | |
| 2062 | Ala Val Asn Asn Val Asp Ala Ala Val Val Leu Leu Lys Asn Gly Ala |
| 2063 | 180 185 190 |
| 2064 | |
| 2065 | Asn Lys Asp Met Gln Asn Asn Arg Glu Glu Thr Pro Leu Phe Leu Ala |
| 2066 | 195 200 205 |
| 2067 | |
| 2068 | Ala Arg Glu Gly Ser Tyr Glu Thr Ala Lys Val Leu Leu Asp His Phe |
| 2069 | 210 215 220 |
| 2070 | |
| 2071 | Ala Asn Arg Asp Ile Thr Asp His Met Asp Arg Leu Pro Arg Asp Ile |
| 2072 | 225 230 235 240 |
| 2073 | |
| 2074 | Ala Gln Glu Arg Met His His Asp Ile Val Arg Leu Leu Asp Glu Tyr |
| 2075 | 245 250 255 |
| 2076 | |
| 2077 | Asn Leu Val Arg Ser Pro Gln Leu His Gly Ala Pro Leu Gly Gly Thr |
| 2078 | 260 265 270 |
| 2079 | |
| 2080 | Pro Thr Leu Ser Pro Pro Leu Cys Ser Pro Asn Gly Tyr Leu Gly Ser |
| 2081 | 275 280 285 |
| 2082 | |
| 2083 | Leu Lys Pro Gly Val Gln Gly Lys Lys Val Arg Lys Pro Ser Ser Lys |
| 2084 | 290 295 300 |
| 2085 | |
| 2086 | Gly Leu Ala Cys Gly Ser Lys Glu Ala Lys Asp Leu Lys Ala Arg Arg |
| 2087 | 305 310 315 320 |
| 2088 | |
| 2089 | Lys Lys Ser Gln Asp Gly Lys Gly Cys Leu Leu Asp Ser Ser Gly Met |
| 2090 | 325 330 335 |
| 2091 | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:12:08

INPUT SET: S7068.raw

| | |
|------|---|
| 2092 | Leu Ser Pro Val Asp Ser Leu Glu Ser Pro His Gly Tyr Leu Ser Asp |
| 2093 | 340 345 350 |
| 2094 | |
| 2095 | Val Ala Ser Pro Pro Leu Leu Pro Ser Pro Phe Gln Gln Ser Pro Ser |
| 2096 | 355 360 365 |
| 2097 | |
| 2098 | Val Pro Leu Asn His Leu Pro Gly Met Pro Asp Thr His Leu Gly Ile |
| 2099 | 370 375 380 |
| 2100 | |
| 2101 | Gly His Leu Asn Val Ala Ala Lys Pro Glu Met Ala Ala Leu Gly Gly |
| 2102 | 385 390 395 400 |
| 2103 | |
| 2104 | Gly Gly Arg Leu Ala Phe Glu Thr Gly Pro Pro Arg Leu Ser His Leu |
| 2105 | 405 410 415 |
| 2106 | |
| 2107 | Pro Val Ala Ser Gly Thr Ser Thr Val Leu Gly Ser Ser Ser Gly Gly |
| 2108 | 420 425 430 |
| 2109 | |
| 2110 | Ala Leu Asn Phe Thr Val Gly Gly Ser Thr Ser Leu Asn Gly Gln Cys |
| 2111 | 435 440 445 |
| 2112 | |
| 2113 | Glu Trp Leu Ser Arg Leu Gln Ser Gly Met Val Pro Asn Gln Tyr Asn |
| 2114 | 450 455 460 |
| 2115 | |
| 2116 | Pro Leu Arg Gly Ser Val Ala Pro Gly Pro Leu Ser Thr Gln Ala Pro |
| 2117 | 465 470 475 480 |
| 2118 | |
| 2119 | Ser Leu Gln His Gly Met Val Gly Pro Leu His Ser Ser Leu Ala Ala |
| 2120 | 485 490 495 |
| 2121 | |
| 2122 | Ser Ala Leu Ser Gln Met Met Ser Tyr Gln Gly Leu Pro Ser Thr Arg |
| 2123 | 500 505 510 |
| 2124 | |
| 2125 | Leu Ala Thr Gln Pro His Leu Val Gln Thr Gln Gln Val Gln Pro Gln |
| 2126 | 515 520 525 |
| 2127 | |
| 2128 | Asn Leu Gln Met Gln Gln Gln Asn Leu Gln Pro Ala Asn Ile Gln Gln |
| 2129 | 530 535 540 |
| 2130 | |
| 2131 | Gln Gln Ser Leu Gln Pro Pro Pro Pro Pro Gln Pro His Leu Gly |
| 2132 | 545 550 555 560 |
| 2133 | |
| 2134 | Val Ser Ser Ala Ala Ser Gly His Leu Gly Arg Ser Phe Leu Ser Gly |
| 2135 | 565 570 575 |
| 2136 | |
| 2137 | Glu Pro Ser Gln Ala Asp Val Gln Pro Leu Gly Pro Ser Ser Leu Ala |
| 2138 | 580 585 590 |
| 2139 | |
| 2140 | Val His Thr Ile Leu Pro Gln Glu Ser Pro Ala Leu Pro Thr Ser Leu |
| 2141 | 595 600 605 |
| 2142 | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:12:15

INPUT SET: S7068.raw

```

2143   Pro Ser Ser Leu Val Pro Pro Val Thr Ala Ala Gln Phe Leu Thr Pro
2144           610                      615                      620
2145
2146   Pro Ser Gln His Ser Tyr Ser Ser Pro Val Glu Asn Thr Pro Ser His
2147   625                      630                      635                      640
2148
2149   Gln Leu Gln Val Pro Glu His Pro Phe Leu Thr Pro Ser Pro Glu Ser
2150           645                      650                      655
2151
2152   Pro Asp Gln Trp Ser Ser Ser Ser Pro His Ser Asn Val Ser Asp Trp
2153           660                      665                      670
2154
2155   Ser Glu Gly Val Ser Ser Pro Pro Thr
2156           675                      680
2157

```

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 2471 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

```

2171   Met Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ala Leu Trp
2172   1                      5                      10                      15
2173
2174   Leu Cys Cys Ala Ala Pro Ala His Ala Leu Gln Cys Arg Asp Gly Tyr
2175           20                      25                      30
2176
2177   Glu Pro Cys Val Asn Glu Gly Met Cys Val Thr Tyr His Asn Gly Thr
2178           35                      40                      45
2179
2180   Gly Tyr Cys Lys Cys Pro Glu Gly Phe Leu Gly Glu Tyr Cys Gln His
2181           50                      55                      60
2182
2183   Arg Asp Pro Cys Glu Lys Asn Arg Cys Gln Asn Gly Gly Thr Cys Val
2184   65                      70                      75                      80
2185
2186   Ala Gln Ala Met Leu Gly Lys Ala Thr Cys Arg Cys Ala Ser Gly Phe
2187           85                      90                      95
2188
2189   Thr Gly Glu Asp Cys Gln Tyr Ser Thr Ser His Pro Cys Phe Val Ser
2190           100                     105                     110
2191
2192   Arg Pro Cys Leu Asn Gly Gly Thr Cys His Met Leu Ser Arg Asp Thr
2193

```

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:12:22

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 2194 | | 115 | | 120 | | 125 | | | | | | | | | | | |
| 2195 | | | | | | | | | | | | | | | | | |
| 2196 | Tyr | Glu | Cys | Thr | Cys | Gln | Val | Gly | Phe | Thr | Gly | Lys | Glu | Cys | Gln | Trp | |
| 2197 | | 130 | | | | | 135 | | | | | 140 | | | | | |
| 2198 | | | | | | | | | | | | | | | | | |
| 2199 | Thr | Asp | Ala | Cys | Leu | Ser | His | Pro | Cys | Ala | Asn | Gly | Ser | Thr | Cys | Thr | |
| 2200 | 145 | | | | | 150 | | | | | 155 | | | | | 160 | |
| 2201 | | | | | | | | | | | | | | | | | |
| 2202 | Thr | Val | Ala | Asn | Gln | Phe | Ser | Cys | Lys | Cys | Leu | Thr | Gly | Phe | Thr | Gly | |
| 2203 | | | | | 165 | | | | | 170 | | | | | | 175 | |
| 2204 | | | | | | | | | | | | | | | | | |
| 2205 | Gln | Lys | Cys | Glu | Thr | Asp | Val | Asn | Glu | Cys | Asp | Ile | Pro | Gly | His | Cys | |
| 2206 | | | | 180 | | | | | 185 | | | | | 190 | | | |
| 2207 | | | | | | | | | | | | | | | | | |
| 2208 | Gln | His | Gly | Gly | Thr | Cys | Leu | Asn | Leu | Pro | Gly | Ser | Tyr | Gln | Cys | Gln | |
| 2209 | | | 195 | | | | | 200 | | | | | 205 | | | | |
| 2210 | | | | | | | | | | | | | | | | | |
| 2211 | Cys | Pro | Gln | Gly | Phe | Thr | Gly | Gln | Tyr | Cys | Asp | Ser | Leu | Tyr | Val | Pro | |
| 2212 | | 210 | | | | | 215 | | | | | 220 | | | | | |
| 2213 | | | | | | | | | | | | | | | | | |
| 2214 | Cys | Ala | Pro | Ser | Pro | Cys | Val | Asn | Gly | Gly | Thr | Cys | Arg | Gln | Thr | Gly | |
| 2215 | 225 | | | | | 230 | | | | | 235 | | | | | 240 | |
| 2216 | | | | | | | | | | | | | | | | | |
| 2217 | Asp | Phe | Thr | Phe | Glu | Cys | Asn | Cys | Leu | Pro | Gly | Phe | Glu | Gly | Ser | Thr | |
| 2218 | | | | | 245 | | | | | 250 | | | | | 255 | | |
| 2219 | | | | | | | | | | | | | | | | | |
| 2220 | Cys | Glu | Arg | Asn | Ile | Asp | Asp | Cys | Pro | Asn | His | Arg | Cys | Gln | Asn | Gly | |
| 2221 | | | | 260 | | | | | 265 | | | | | 270 | | | |
| 2222 | | | | | | | | | | | | | | | | | |
| 2223 | Gly | Val | Cys | Val | Asp | Gly | Val | Asn | Thr | Tyr | Asn | Cys | Arg | Cys | Pro | Pro | |
| 2224 | | | 275 | | | | | 280 | | | | | 285 | | | | |
| 2225 | | | | | | | | | | | | | | | | | |
| 2226 | Gln | Trp | Thr | Gly | Gln | Phe | Cys | Thr | Glu | Asp | Val | Asp | Glu | Cys | Leu | Leu | |
| 2227 | | 290 | | | | | 295 | | | | | 300 | | | | | |
| 2228 | | | | | | | | | | | | | | | | | |
| 2229 | Gln | Pro | Asn | Ala | Cys | Gln | Asn | Gly | Gly | Thr | Cys | Ala | Asn | Arg | Asn | Gly | |
| 2230 | 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| 2231 | | | | | | | | | | | | | | | | | |
| 2232 | Gly | Tyr | Gly | Cys | Val | Cys | Val | Asn | Gly | Trp | Ser | Gly | Asp | Asp | Cys | Ser | |
| 2233 | | | | | 325 | | | | | 330 | | | | | 335 | | |
| 2234 | | | | | | | | | | | | | | | | | |
| 2235 | Glu | Asn | Ile | Asp | Asp | Cys | Ala | Phe | Ala | Ser | Cys | Thr | Pro | Gly | Ser | Thr | |
| 2236 | | | | 340 | | | | | 345 | | | | | 350 | | | |
| 2237 | | | | | | | | | | | | | | | | | |
| 2238 | Cys | Ile | Asp | Arg | Val | Ala | Ser | Phe | Ser | Cys | Met | Cys | Pro | Glu | Gly | Lys | |
| 2239 | | 355 | | | | | | 360 | | | | | 365 | | | | |
| 2240 | | | | | | | | | | | | | | | | | |
| 2241 | Ala | Gly | Leu | Leu | Cys | His | Leu | Asp | Asp | Ala | Cys | Ile | Ser | Asn | Pro | Cys | |
| 2242 | | 370 | | | | | 375 | | | | | 380 | | | | | |
| 2243 | | | | | | | | | | | | | | | | | |
| 2244 | His | Lys | Gly | Ala | Leu | Cys | Asp | Thr | Asn | Pro | Leu | Asn | Gly | Gln | Tyr | Ile | |

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:12:28
INPUT SET: S7068.raw

| | | | | | | | |
|------|---|-----|-----|-----|-----|-----|-----|
| 2245 | 385 | | 390 | | 395 | | 400 |
| 2246 | | | | | | | |
| 2247 | Cys Thr Cys Pro Gln Gly Tyr Lys Gly Ala Asp Cys Thr Glu Asp Val | | | | | | |
| 2248 | | 405 | | 410 | | 415 | |
| 2249 | | | | | | | |
| 2250 | Asp Glu Cys Ala Met Ala Asn Ser Asn Pro Cys Glu His Ala Gly Lys | | | | | | |
| 2251 | | 420 | | 425 | | 430 | |
| 2252 | | | | | | | |
| 2253 | Cys Val Asn Thr Asp Gly Ala Phe His Cys Glu Cys Leu Lys Gly Tyr | | | | | | |
| 2254 | | 435 | | 440 | | 445 | |
| 2255 | | | | | | | |
| 2256 | Ala Gly Pro Arg Cys Glu Met Asp Ile Asn Glu Cys His Ser Asp Pro | | | | | | |
| 2257 | | 450 | | 455 | | 460 | |
| 2258 | | | | | | | |
| 2259 | Cys Gln Asn Asp Ala Thr Cys Leu Asp Lys Ile Gly Gly Phe Thr Cys | | | | | | |
| 2260 | | 465 | | 470 | | 475 | 480 |
| 2261 | | | | | | | |
| 2262 | Leu Cys Met Pro Gly Phe Lys Gly Val His Cys Glu Leu Glu Ile Asn | | | | | | |
| 2263 | | 485 | | 490 | | 495 | |
| 2264 | | | | | | | |
| 2265 | Glu Cys Gln Ser Asn Pro Cys Val Asn Asn Gly Gln Cys Val Asp Lys | | | | | | |
| 2266 | | 500 | | 505 | | 510 | |
| 2267 | | | | | | | |
| 2268 | Val Asn Arg Phe Gln Cys Leu Cys Pro Pro Gly Phe Thr Gly Pro Val | | | | | | |
| 2269 | | 515 | | 520 | | 525 | |
| 2270 | | | | | | | |
| 2271 | Cys Gln Ile Asp Ile Asp Asp Cys Ser Ser Thr Pro Cys Leu Asn Gly | | | | | | |
| 2272 | | 530 | | 535 | | 540 | |
| 2273 | | | | | | | |
| 2274 | Ala Lys Cys Ile Asp His Pro Asn Gly Tyr Glu Cys Gln Cys Ala Thr | | | | | | |
| 2275 | | 545 | | 550 | | 555 | 560 |
| 2276 | | | | | | | |
| 2277 | Gly Phe Thr Gly Val Leu Cys Glu Glu Asn Ile Asp Asn Cys Asp Pro | | | | | | |
| 2278 | | 565 | | 570 | | 575 | |
| 2279 | | | | | | | |
| 2280 | Asp Pro Cys His His Gly Gln Cys Gln Asp Gly Ile Asp Ser Tyr Thr | | | | | | |
| 2281 | | 580 | | 585 | | 590 | |
| 2282 | | | | | | | |
| 2283 | Cys Ile Cys Asn Pro Gly Tyr Met Gly Ala Ile Cys Ser Asp Gln Ile | | | | | | |
| 2284 | | 595 | | 600 | | 605 | |
| 2285 | | | | | | | |
| 2286 | Asp Glu Cys Tyr Ser Ser Pro Cys Leu Asn Asp Gly Arg Cys Ile Asp | | | | | | |
| 2287 | | 610 | | 615 | | 620 | |
| 2288 | | | | | | | |
| 2289 | Leu Val Asn Gly Tyr Gln Cys Asn Cys Gln Pro Gly Thr Ser Gly Val | | | | | | |
| 2290 | | 625 | | 630 | | 635 | 640 |
| 2291 | | | | | | | |
| 2292 | Asn Cys Glu Ile Asn Phe Asp Asp Cys Ala Ser Asn Pro Cys Ile His | | | | | | |
| 2293 | | 645 | | 650 | | 655 | |
| 2294 | | | | | | | |
| 2295 | Gly Ile Cys Met Asp Gly Ile Asn Arg Tyr Ser Cys Val Cys Ser Pro | | | | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:12:35

INPUT SET: S7068.raw

| | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|
| 2296 | | 660 | | 665 | | 670 | |
| 2297 | | | | | | | |
| 2298 | Gly | Phe | Thr | Gly | Gln | Arg | Cys |
| 2299 | | | 675 | | | 680 | |
| 2300 | | | | | | 685 | |
| 2301 | Asn | Pro | Cys | Arg | Lys | Gly | Ala |
| 2302 | | 690 | | | | 695 | |
| 2303 | | | | | | 700 | |
| 2304 | Arg | Cys | Ile | Cys | Pro | Glu | Gly |
| 2305 | 705 | | | | 710 | | |
| 2306 | | | | | | 715 | |
| 2307 | Val | Asn | Glu | Cys | Leu | Ser | Asn |
| 2308 | | | | 725 | | 730 | |
| 2309 | | | | | | | |
| 2310 | Gly | Leu | Ser | Gly | Tyr | Lys | Cys |
| 2311 | | | 740 | | | 745 | |
| 2312 | | | | | | | |
| 2313 | Asn | Cys | Glu | Val | Asp | Lys | Asn |
| 2314 | | 755 | | | | 760 | |
| 2315 | | | | | | 765 | |
| 2316 | Gly | Gly | Thr | Cys | Asp | Asn | Leu |
| 2317 | 770 | | | | 775 | | |
| 2318 | | | | | | 780 | |
| 2319 | Lys | Gly | Phe | Lys | Gly | Tyr | Asn |
| 2320 | 785 | | | | 790 | | |
| 2321 | | | | | | 795 | |
| 2322 | Ser | Asn | Pro | Cys | Leu | Asn | Gln |
| 2323 | | | | 805 | | 810 | |
| 2324 | | | | | | | |
| 2325 | Tyr | Thr | Cys | His | Cys | Val | Leu |
| 2326 | | | 820 | | | 825 | |
| 2327 | | | | | | | |
| 2328 | Val | Leu | Ala | Pro | Cys | Ser | Pro |
| 2329 | | 835 | | | | 840 | |
| 2330 | | | | | | | |
| 2331 | Lys | Glu | Ser | Pro | Asn | Phe | Glu |
| 2332 | 850 | | | | | 855 | |
| 2333 | | | | | | | |
| 2334 | Trp | Gln | Gly | Gln | Arg | Cys | Thr |
| 2335 | 865 | | | | 870 | | |
| 2336 | | | | | | 875 | |
| 2337 | Pro | Cys | Met | Asn | His | Gly | Leu |
| 2338 | | | | 885 | | 890 | |
| 2339 | | | | | | | |
| 2340 | Cys | Glu | Cys | Pro | Pro | Gly | Phe |
| 2341 | | | 900 | | | 905 | |
| 2342 | | | | | | | |
| 2343 | Asp | Asp | Cys | Leu | Ala | Asn | Pro |
| 2344 | | 915 | | | | 920 | |
| 2345 | | | | | | | |
| 2346 | Gly | Val | Asn | Thr | Phe | Ser | Cys |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:12:42

INPUT SET: S7068.raw

| | | | |
|------|---|------|----------------|
| 2347 | 930 | 935 | 940 |
| 2348 | | | |
| 2349 | Lys Cys Gln Thr Asp Met Asn Glu Cys Leu Ser Glu Pro Cys Lys Asn | | |
| 2350 | 945 | 950 | 955 960 |
| 2351 | | | |
| 2352 | Gly Gly Thr Cys Ser Asp Tyr Val Asn Ser Tyr Thr Cys Lys Cys Gln | | |
| 2353 | | 965 | 970 975 |
| 2354 | | | |
| 2355 | Ala Gly Phe Asp Gly Val His Cys Glu Asn Asn Ile Asn Glu Cys Thr | | |
| 2356 | | 980 | 985 990 |
| 2357 | | | |
| 2358 | Glu Ser Ser Cys Phe Asn Gly Gly Thr Cys Val Asp Gly Ile Asn Ser | | |
| 2359 | | 995 | 1000 1005 |
| 2360 | | | |
| 2361 | Phe Ser Cys Leu Cys Pro Val Gly Phe Thr Gly Ser Phe Cys Leu His | | |
| 2362 | | 1010 | 1015 1020 |
| 2363 | | | |
| 2364 | Glu Ile Asn Glu Cys Ser Ser His Pro Cys Leu Asn Glu Gly Thr Cys | | |
| 2365 | | 1025 | 1030 1035 1040 |
| 2366 | | | |
| 2367 | Val Asp Gly Leu Gly Thr Tyr Arg Cys Ser Cys Pro Leu Gly Tyr Thr | | |
| 2368 | | 1045 | 1050 1055 |
| 2369 | | | |
| 2370 | Gly Lys Asn Cys Gln Thr Leu Val Asn Leu Cys Ser Arg Ser Pro Cys | | |
| 2371 | | 1060 | 1065 1070 |
| 2372 | | | |
| 2373 | Lys Asn Lys Gly Thr Cys Val Gln Lys Lys Ala Glu Ser Gln Cys Leu | | |
| 2374 | | 1075 | 1080 1085 |
| 2375 | | | |
| 2376 | Cys Pro Ser Gly Trp Ala Gly Ala Tyr Cys Asp Val Pro Asn Val Ser | | |
| 2377 | | 1090 | 1095 1100 |
| 2378 | | | |
| 2379 | Cys Asp Ile Ala Ala Ser Arg Arg Gly Val Leu Val Glu His Leu Cys | | |
| 2380 | | 1105 | 1110 1115 1120 |
| 2381 | | | |
| 2382 | Gln His Ser Gly Val Cys Ile Asn Ala Gly Asn Thr His Tyr Cys Gln | | |
| 2383 | | 1125 | 1130 1135 |
| 2384 | | | |
| 2385 | Cys Pro Leu Gly Tyr Thr Gly Ser Tyr Cys Glu Glu Gln Leu Asp Glu | | |
| 2386 | | 1140 | 1145 1150 |
| 2387 | | | |
| 2388 | Cys Ala Ser Asn Pro Cys Gln His Gly Ala Thr Cys Ser Asp Phe Ile | | |
| 2389 | | 1155 | 1160 1165 |
| 2390 | | | |
| 2391 | Gly Gly Tyr Arg Cys Glu Cys Val Pro Gly Tyr Gln Gly Val Asn Cys | | |
| 2392 | | 1170 | 1175 1180 |
| 2393 | | | |
| 2394 | Glu Tyr Glu Val Asp Glu Cys Gln Asn Gln Pro Cys Gln Asn Gly Gly | | |
| 2395 | | 1185 | 1190 1195 1200 |
| 2396 | | | |
| 2397 | Thr Cys Ile Asp Leu Val Asn His Phe Lys Cys Ser Cys Pro Pro Gly | | |

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:12:49

INPUT SET: S7068.raw

| | | | | | | |
|------|---|------|--|------|--|------|
| 2398 | | 1205 | | 1210 | | 1215 |
| 2399 | | | | | | |
| 2400 | Thr Arg Gly Leu Leu Cys Glu Glu Asn Ile Asp Asp Cys Ala Arg Gly | | | | | |
| 2401 | | 1220 | | 1225 | | 1230 |
| 2402 | | | | | | |
| 2403 | Pro His Cys Leu Asn Gly Gly Gln Cys Met Asp Arg Ile Gly Gly Tyr | | | | | |
| 2404 | | 1235 | | 1240 | | 1245 |
| 2405 | | | | | | |
| 2406 | Ser Cys Arg Cys Leu Pro Gly Phe Ala Gly Glu Arg Cys Glu Gly Asp | | | | | |
| 2407 | | 1250 | | 1255 | | 1260 |
| 2408 | | | | | | |
| 2409 | Ile Asn Glu Cys Leu Ser Asn Pro Cys Ser Ser Glu Gly Ser Leu Asp | | | | | |
| 2410 | | 1265 | | 1270 | | 1275 |
| 2411 | | | | | | |
| 2412 | Cys Ile Gln Leu Thr Asn Asp Tyr Leu Cys Val Cys Arg Ser Ala Phe | | | | | |
| 2413 | | 1285 | | 1290 | | 1295 |
| 2414 | | | | | | |
| 2415 | Thr Gly Arg His Cys Glu Thr Phe Val Asp Val Cys Pro Gln Met Pro | | | | | |
| 2416 | | 1300 | | 1305 | | 1310 |
| 2417 | | | | | | |
| 2418 | Cys Leu Asn Gly Gly Thr Cys Ala Val Ala Ser Asn Met Pro Asp Gly | | | | | |
| 2419 | | 1315 | | 1320 | | 1325 |
| 2420 | | | | | | |
| 2421 | Phe Ile Cys Arg Cys Pro Pro Gly Phe Ser Gly Ala Arg Cys Gln Ser | | | | | |
| 2422 | | 1330 | | 1335 | | 1340 |
| 2423 | | | | | | |
| 2424 | Ser Cys Gly Gln Val Lys Cys Arg Lys Gly Glu Gln Cys Val His Thr | | | | | |
| 2425 | | 1345 | | 1350 | | 1355 |
| 2426 | | | | | | |
| 2427 | Ala Ser Gly Pro Arg Cys Phe Cys Pro Ser Pro Arg Asp Cys Glu Ser | | | | | |
| 2428 | | 1365 | | 1370 | | 1375 |
| 2429 | | | | | | |
| 2430 | Gly Cys Ala Ser Ser Pro Cys Gln His Gly Gly Ser Cys His Pro Gln | | | | | |
| 2431 | | 1380 | | 1385 | | 1390 |
| 2432 | | | | | | |
| 2433 | Arg Gln Pro Pro Tyr Tyr Ser Cys Gln Cys Ala Pro Pro Phe Ser Gly | | | | | |
| 2434 | | 1395 | | 1400 | | 1405 |
| 2435 | | | | | | |
| 2436 | Ser Arg Cys Glu Leu Tyr Thr Ala Pro Pro Ser Thr Pro Pro Ala Thr | | | | | |
| 2437 | | 1410 | | 1415 | | 1420 |
| 2438 | | | | | | |
| 2439 | Cys Leu Ser Gln Tyr Cys Ala Asp Lys Ala Arg Asp Gly Val Cys Asp | | | | | |
| 2440 | | 1425 | | 1430 | | 1435 |
| 2441 | | | | | | |
| 2442 | Glu Ala Cys Asn Ser His Ala Cys Gln Trp Asp Gly Gly Asp Cys Ser | | | | | |
| 2443 | | 1445 | | 1450 | | 1455 |
| 2444 | | | | | | |
| 2445 | Leu Thr Met Glu Asn Pro Trp Ala Asn Cys Ser Ser Pro Leu Pro Cys | | | | | |
| 2446 | | 1460 | | 1465 | | 1470 |
| 2447 | | | | | | |
| 2448 | Trp Asp Tyr Ile Asn Asn Gln Cys Asp Glu Leu Cys Asn Thr Val Glu | | | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:12:55

INPUT SET: S7068.raw

| | | | |
|------|---|------|-----------|
| 2449 | 1475 | 1480 | 1485 |
| 2450 | | | |
| 2451 | Cys Leu Phe Asp Asn Phe Glu Cys Gln Gly Asn Ser Lys Thr Cys Lys | | |
| 2452 | 1490 | 1495 | 1500 |
| 2453 | | | |
| 2454 | Tyr Asp Lys Tyr Cys Ala Asp His Phe Lys Asp Asn His Cys Asn Gln | | |
| 2455 | 1505 | 1510 | 1515 1520 |
| 2456 | | | |
| 2457 | Gly Cys Asn Ser Glu Glu Cys Gly Trp Asp Gly Leu Asp Cys Ala Ala | | |
| 2458 | 1525 | 1530 | 1535 |
| 2459 | | | |
| 2460 | Asp Gln Pro Glu Asn Leu Ala Glu Gly Thr Leu Val Ile Val Val Leu | | |
| 2461 | 1540 | 1545 | 1550 |
| 2462 | | | |
| 2463 | Met Pro Pro Glu Gln Leu Leu Gln Asp Ala Arg Ser Phe Leu Arg Ala | | |
| 2464 | 1555 | 1560 | 1565 |
| 2465 | | | |
| 2466 | Leu Gly Thr Leu Leu His Thr Asn Leu Arg Ile Lys Arg Asp Ser Gln | | |
| 2467 | 1570 | 1575 | 1580 |
| 2468 | | | |
| 2469 | Gly Glu Leu Met Val Tyr Pro Tyr Tyr Gly Glu Lys Ser Ala Ala Met | | |
| 2470 | 1585 | 1590 | 1595 1600 |
| 2471 | | | |
| 2472 | Lys Lys Gln Arg Met Thr Arg Arg Ser Leu Pro Gly Glu Gln Glu Gln | | |
| 2473 | 1605 | 1610 | 1615 |
| 2474 | | | |
| 2475 | Glu Val Ala Gly Ser Lys Val Phe Leu Glu Ile Asp Asn Arg Gln Cys | | |
| 2476 | 1620 | 1625 | 1630 |
| 2477 | | | |
| 2478 | Val Gln Asp Ser Asp His Cys Phe Lys Asn Thr Asp Ala Ala Ala Ala | | |
| 2479 | 1635 | 1640 | 1645 |
| 2480 | | | |
| 2481 | Leu Leu Ala Ser His Ala Ile Gln Gly Thr Leu Ser Tyr Pro Leu Val | | |
| 2482 | 1650 | 1655 | 1660 |
| 2483 | | | |
| 2484 | Ser Val Val Ser Glu Ser Leu Thr Pro Glu Arg Thr Gln Leu Leu Tyr | | |
| 2485 | 1665 | 1670 | 1675 1680 |
| 2486 | | | |
| 2487 | Leu Leu Ala Val Ala Val Val Ile Ile Leu Phe Ile Ile Leu Leu Gly | | |
| 2488 | 1685 | 1690 | 1695 |
| 2489 | | | |
| 2490 | Val Ile Met Ala Lys Arg Lys Arg Lys His Gly Ser Leu Trp Leu Pro | | |
| 2491 | 1700 | 1705 | 1710 |
| 2492 | | | |
| 2493 | Glu Gly Phe Thr Leu Arg Arg Asp Ala Ser Asn His Lys Arg Arg Glu | | |
| 2494 | 1715 | 1720 | 1725 |
| 2495 | | | |
| 2496 | Pro Val Gly Gln Asp Ala Val Gly Leu Lys Asn Leu Ser Val Gln Val | | |
| 2497 | 1730 | 1735 | 1740 |
| 2498 | | | |
| 2499 | Ser Glu Ala Asn Leu Ile Gly Thr Gly Thr Ser Glu His Trp Val Asp | | |

RAW SEQUENCE LISTING PATENT APPLICATION *US/08/083,590*

DATE: 12/16/93
TIME: 13:13:01

INPUT SET: S7068.raw

| | | | | |
|------|---|------|------|------|
| 2500 | 1745 | 1750 | 1755 | 1760 |
| 2501 | | | | |
| 2502 | Asp Glu Gly Pro Gln Pro Lys Lys Val Lys Ala Glu Asp Glu Ala Leu | | | |
| 2503 | 1765 | 1770 | 1775 | |
| 2504 | | | | |
| 2505 | Leu Ser Glu Glu Asp Asp Pro Ile Asp Arg Arg Pro Trp Thr Gln Gln | | | |
| 2506 | 1780 | 1785 | 1790 | |
| 2507 | | | | |
| 2508 | His Leu Glu Ala Ala Asp Ile Arg Arg Thr Pro Ser Leu Ala Leu Thr | | | |
| 2509 | 1795 | 1800 | 1805 | |
| 2510 | | | | |
| 2511 | Pro Pro Gln Ala Glu Gln Glu Val Asp Val Leu Asp Val Asn Val Arg | | | |
| 2512 | 1810 | 1815 | 1820 | |
| 2513 | | | | |
| 2514 | Gly Pro Asp Gly Cys Thr Pro Leu Met Leu Ala Ser Leu Arg Gly Gly | | | |
| 2515 | 1825 | 1830 | 1835 | 1840 |
| 2516 | | | | |
| 2517 | Ser Ser Asp Leu Ser Asp Glu Asp Glu Asp Ala Glu Asp Ser Ser Ala | | | |
| 2518 | 1845 | 1850 | 1855 | |
| 2519 | | | | |
| 2520 | Asn Ile Ile Thr Asp Leu Val Tyr Gln Gly Ala Ser Leu Gln Ala Gln | | | |
| 2521 | 1860 | 1865 | 1870 | |
| 2522 | | | | |
| 2523 | Thr Asp Arg Thr Gly Glu Met Ala Leu His Leu Ala Ala Arg Tyr Ser | | | |
| 2524 | 1875 | 1880 | 1885 | |
| 2525 | | | | |
| 2526 | Arg Ala Asp Ala Ala Lys Arg Leu Leu Asp Ala Gly Ala Asp Ala Asn | | | |
| 2527 | 1890 | 1895 | 1900 | |
| 2528 | | | | |
| 2529 | Ala Gln Asp Asn Met Gly Arg Cys Pro Leu His Ala Ala Val Ala Ala | | | |
| 2530 | 1905 | 1910 | 1915 | 1920 |
| 2531 | | | | |
| 2532 | Asp Ala Gln Gly Val Phe Gln Ile Leu Ile Arg Asn Arg Val Thr Asp | | | |
| 2533 | 1925 | 1930 | 1935 | |
| 2534 | | | | |
| 2535 | Leu Asp Ala Arg Met Asn Asp Gly Thr Thr Pro Leu Ile Leu Ala Ala | | | |
| 2536 | 1940 | 1945 | 1950 | |
| 2537 | | | | |
| 2538 | Arg Leu Ala Val Glu Gly Met Val Ala Glu Leu Ile Asn Cys Gln Ala | | | |
| 2539 | 1955 | 1960 | 1965 | |
| 2540 | | | | |
| 2541 | Asp Val Asn Ala Val Asp Asp His Gly Lys Ser Ala Leu His Trp Ala | | | |
| 2542 | 1970 | 1975 | 1980 | |
| 2543 | | | | |
| 2544 | Ala Ala Val Asn Asn Val Glu Ala Thr Leu Leu Leu Leu Lys Asn Gly | | | |
| 2545 | 1985 | 1990 | 1995 | 2000 |
| 2546 | | | | |
| 2547 | Ala Asn Arg Asp Met Gln Asp Asn Lys Glu Glu Thr Pro Leu Phe Leu | | | |
| 2548 | 2005 | 2010 | 2015 | |
| 2549 | | | | |
| 2550 | Ala Ala Arg Glu Gly Ser Tyr Glu Ala Ala Lys Ile Leu Leu Asp His | | | |

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:13:08
INPUT SET: S7068.raw

| | 2020 | 2025 | 2030 |
|------|---------------------------------|---------------------|-----------------|
| 2551 | | | |
| 2552 | | | |
| 2553 | Phe Ala Asn Arg Asp Ile Thr | Asp His Met Asp Arg | Leu Pro Arg Asp |
| 2554 | 2035 | 2040 | 2045 |
| 2555 | | | |
| 2556 | Val Ala Arg Asp Arg Met His His | Asp Ile Val Arg | Leu Leu Asp Glu |
| 2557 | 2050 | 2055 | 2060 |
| 2558 | | | |
| 2559 | Tyr Asn Val Thr Pro Ser Pro | Pro Gly Thr Val Leu | Thr Ser Ala Leu |
| 2560 | 2065 | 2070 | 2075 2080 |
| 2561 | | | |
| 2562 | Ser Pro Val Ile Cys Gly Pro Asn | Arg Ser Phe Leu Ser | Leu Lys His |
| 2563 | 2085 | 2090 | 2095 |
| 2564 | | | |
| 2565 | Thr Pro Met Gly Lys Lys Ser | Arg Arg Pro Ser Ala | Lys Ser Thr Met |
| 2566 | 2100 | 2105 | 2110 |
| 2567 | | | |
| 2568 | Pro Thr Ser Leu Pro Asn Leu | Ala Lys Glu Ala Lys | Asp Ala Lys Gly |
| 2569 | 2115 | 2120 | 2125 |
| 2570 | | | |
| 2571 | Ser Arg Arg Lys Lys Ser Leu | Ser Glu Lys Val Gln | Leu Ser Glu Ser |
| 2572 | 2130 | 2135 | 2140 |
| 2573 | | | |
| 2574 | Ser Val Thr Leu Ser Pro Val | Asp Ser Leu Glu Ser | Pro His Thr Tyr |
| 2575 | 2145 | 2150 | 2155 2160 |
| 2576 | | | |
| 2577 | Val Ser Asp Thr Thr Ser Ser | Pro Met Ile Thr Ser | Pro Gly Ile Leu |
| 2578 | 2165 | 2170 | 2175 |
| 2579 | | | |
| 2580 | Gln Ala Ser Pro Asn Pro Met | Leu Ala Thr Ala Ala | Pro Pro Ala Pro |
| 2581 | 2180 | 2185 | 2190 |
| 2582 | | | |
| 2583 | Val His Ala Gln His Ala Leu | Ser Phe Ser Asn Leu | His Glu Met Gln |
| 2584 | 2195 | 2200 | 2205 |
| 2585 | | | |
| 2586 | Pro Leu Ala His Gly Ala Ser | Thr Val Leu Pro Ser | Val Ser Gln Leu |
| 2587 | 2210 | 2215 | 2220 |
| 2588 | | | |
| 2589 | Leu Ser His His His Ile Val | Ser Pro Gly Ser Gly | Ser Ala Gly Ser |
| 2590 | 2225 | 2230 | 2235 2240 |
| 2591 | | | |
| 2592 | Leu Ser Arg Leu His Pro Val | Pro Val Pro Ala Asp | Trp Met Asn Arg |
| 2593 | 2245 | 2250 | 2255 |
| 2594 | | | |
| 2595 | Met Glu Val Asn Glu Thr Gln | Tyr Asn Glu Met Phe | Gly Met Val Leu |
| 2596 | 2260 | 2265 | 2270 |
| 2597 | | | |
| 2598 | Ala Pro Ala Glu Gly Thr His | Pro Gly Ile Ala Pro | Gln Ser Arg Pro |
| 2599 | 2275 | 2280 | 2285 |
| 2600 | | | |
| 2601 | Pro Glu Gly Lys His Ile Thr | Thr Pro Arg Glu Pro | Leu Pro Pro Ile |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:13:15

INPUT SET: S7068.raw

```

2602          2290          2295          2300
2603
2604 Val Thr Phe Gln Leu Ile Pro Lys Gly Ser Ile Ala Gln Pro Ala Gly
2605 2305          2310          2315          2320
2606
2607 Ala Pro Gln Pro Gln Ser Thr Cys Pro Pro Ala Val Ala Gly Pro Leu
2608          2325          2330          2335
2609
2610 Pro Thr Met Tyr Gln Ile Pro Glu Met Ala Arg Leu Pro Ser Val Ala
2611          2340          2345          2350
2612
2613 Phe Pro Thr Ala Met Met Pro Gln Gln Asp Gly Gln Val Ala Gln Thr
2614          2355          2360          2365
2615
2616 Ile Leu Pro Ala Tyr His Pro Phe Pro Ala Ser Val Gly Lys Tyr Pro
2617          2370          2375          2380
2618
2619 Thr Pro Pro Ser Gln His Ser Tyr Ala Ser Ser Asn Ala Ala Glu Arg
2620 2385          2390          2395          2400
2621
2622 Thr Pro Ser His Ser Gly His Leu Gln Gly Glu His Pro Tyr Leu Thr
2623          2405          2410          2415
2624
2625 Pro Ser Pro Glu Ser Pro Asp Gln Trp Ser Ser Ser Ser Pro His Ser
2626          2420          2425          2430
2627
2628 Ala Ser Asp Trp Ser Asp Val Thr Thr Ser Pro Thr Pro Gly Gly Ala
2629          2435          2440          2445
2630
2631 Gly Gly Gly Gln Arg Gly Pro Gly Thr His Met Ser Glu Pro Pro His
2632          2450          2455          2460
2633
2634 Asn Asn Met Gln Val Tyr Ala
2635          2465          2470
2636
2637 (2) INFORMATION FOR SEQ ID NO:20:
2638
2639 (i) SEQUENCE CHARACTERISTICS:
2640 (A) LENGTH: 2556 amino acids
2641 (B) TYPE: amino acid
2642 (C) STRANDEDNESS: single
2643 (D) TOPOLOGY: unknown
2644
2645 (ii) MOLECULE TYPE: peptide
2646
2647
2648
2649 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:
2650
2651 Met Pro Pro Leu Leu Ala Pro Leu Leu Cys Leu Ala Leu Leu Pro Ala
2652 1          5          10          15

```

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:13:22
INPUT SET: S7068.raw

```

2653
2654      Leu Ala Ala Arg Gly Pro Arg Cys Ser Gln Pro Gly Glu Thr Cys Leu
2655                20                25                30
2656
2657      Asn Gly Gly Lys Cys Glu Ala Ala Asn Gly Thr Glu Ala Cys Val Cys
2658                35                40                45
2659
2660      Gly Gly Ala Phe Val Gly Pro Arg Cys Gln Asp Pro Asn Pro Cys Leu
2661                50                55                60
2662
2663      Ser Thr Pro Cys Lys Asn Ala Gly Thr Cys His Val Val Asp Arg Arg
2664      65                70                75                80
2665
2666      Gly Val Ala Asp Tyr Ala Cys Ser Cys Ala Leu Gly Phe Ser Gly Pro
2667                85                90                95
2668
2669      Leu Cys Leu Thr Pro Leu Asp Asn Ala Cys Leu Thr Asn Pro Cys Arg
2670                100               105               110
2671
2672      Asn Gly Gly Thr Cys Asp Leu Leu Thr Leu Thr Glu Tyr Lys Cys Arg
2673                115               120               125
2674
2675      Cys Pro Pro Gly Trp Ser Gly Lys Ser Cys Gln Gln Ala Asp Pro Cys
2676      130               135               140
2677
2678      Ala Ser Asn Pro Cys Ala Asn Gly Gly Gln Cys Leu Pro Phe Glu Ala
2679      145               150               155               160
2680
2681      Ser Tyr Ile Cys His Cys Pro Pro Ser Phe His Gly Pro Thr Cys Arg
2682                165               170               175
2683
2684      Gln Asp Val Asn Glu Cys Gly Gln Lys Pro Arg Leu Cys Arg His Gly
2685                180               185               190
2686
2687      Gly Thr Cys His Asn Glu Val Gly Ser Tyr Arg Cys Val Cys Arg Ala
2688                195               200               205
2689
2690      Thr His Thr Gly Pro Asn Cys Glu Arg Pro Tyr Val Pro Cys Ser Pro
2691                210               215               220
2692
2693      Ser Pro Cys Gln Asn Gly Gly Thr Cys Arg Pro Thr Gly Asp Val Thr
2694      225               230               235               240
2695
2696      His Glu Cys Ala Cys Leu Pro Gly Phe Thr Gly Gln Asn Cys Glu Glu
2697                245               250               255
2698
2699      Asn Ile Asp Asp Cys Pro Gly Asn Asn Cys Lys Asn Gly Gly Ala Cys
2700                260               265               270
2701
2702      Val Asp Gly Val Asn Thr Tyr Asn Cys Pro Cys Pro Pro Glu Trp Thr
2703                275               280               285

```

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:13:28

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 2704 | | | | | | | | | | | | | | | | | |
| 2705 | Gly | Gln | Tyr | Cys | Thr | Glu | Asp | Val | Asp | Glu | Cys | Gln | Leu | Met | Pro | Asn | |
| 2706 | | 290 | | | | | 295 | | | | | 300 | | | | | |
| 2707 | | | | | | | | | | | | | | | | | |
| 2708 | Ala | Cys | Gln | Asn | Gly | Gly | Thr | Cys | His | Asn | Thr | His | Gly | Gly | Tyr | Asn | |
| 2709 | 305 | | | | | 310 | | | | | 315 | | | | | 320 | |
| 2710 | | | | | | | | | | | | | | | | | |
| 2711 | Cys | Val | Cys | Val | Asn | Gly | Trp | Thr | Gly | Glu | Asp | Cys | Ser | Glu | Asn | Ile | |
| 2712 | | | | | 325 | | | | | 330 | | | | | 335 | | |
| 2713 | | | | | | | | | | | | | | | | | |
| 2714 | Asp | Asp | Cys | Ala | Ser | Ala | Ala | Cys | Phe | His | Gly | Ala | Thr | Cys | His | Asp | |
| 2715 | | | | 340 | | | | | 345 | | | | | 350 | | | |
| 2716 | | | | | | | | | | | | | | | | | |
| 2717 | Arg | Val | Ala | Ser | Phe | Tyr | Cys | Glu | Cys | Pro | His | Gly | Arg | Thr | Gly | Leu | |
| 2718 | | | 355 | | | | | 360 | | | | | 365 | | | | |
| 2719 | | | | | | | | | | | | | | | | | |
| 2720 | Leu | Cys | His | Leu | Asn | Asp | Ala | Cys | Ile | Ser | Asn | Pro | Cys | Asn | Glu | Gly | |
| 2721 | | 370 | | | | | 375 | | | | | 380 | | | | | |
| 2722 | | | | | | | | | | | | | | | | | |
| 2723 | Ser | Asn | Cys | Asp | Thr | Asn | Pro | Val | Asn | Gly | Lys | Ala | Ile | Cys | Thr | Cys | |
| 2724 | 385 | | | | | 390 | | | | | 395 | | | | | 400 | |
| 2725 | | | | | | | | | | | | | | | | | |
| 2726 | Pro | Ser | Gly | Tyr | Thr | Gly | Pro | Ala | Cys | Ser | Gln | Asp | Val | Asp | Glu | Cys | |
| 2727 | | | | | 405 | | | | | 410 | | | | | 415 | | |
| 2728 | | | | | | | | | | | | | | | | | |
| 2729 | Ser | Leu | Gly | Ala | Asn | Pro | Cys | Glu | His | Ala | Gly | Lys | Cys | Ile | Asn | Thr | |
| 2730 | | | | 420 | | | | | 425 | | | | | 430 | | | |
| 2731 | | | | | | | | | | | | | | | | | |
| 2732 | Leu | Gly | Ser | Phe | Glu | Cys | Gln | Cys | Leu | Gln | Gly | Tyr | Thr | Gly | Pro | Arg | |
| 2733 | | | 435 | | | | | 440 | | | | | 445 | | | | |
| 2734 | | | | | | | | | | | | | | | | | |
| 2735 | Cys | Glu | Ile | Asp | Val | Asn | Glu | Cys | Val | Ser | Asn | Pro | Cys | Gln | Asn | Asp | |
| 2736 | | 450 | | | | | 455 | | | | | 460 | | | | | |
| 2737 | | | | | | | | | | | | | | | | | |
| 2738 | Ala | Thr | Cys | Leu | Asp | Gln | Ile | Gly | Glu | Phe | Gln | Cys | Met | Cys | Met | Pro | |
| 2739 | 465 | | | | | 470 | | | | | 475 | | | | | 480 | |
| 2740 | | | | | | | | | | | | | | | | | |
| 2741 | Gly | Tyr | Glu | Gly | Val | His | Cys | Glu | Val | Asn | Thr | Asp | Glu | Cys | Ala | Ser | |
| 2742 | | | | | 485 | | | | | 490 | | | | | 495 | | |
| 2743 | | | | | | | | | | | | | | | | | |
| 2744 | Ser | Pro | Cys | Leu | His | Asn | Gly | Arg | Cys | Leu | Asp | Lys | Ile | Asn | Glu | Phe | |
| 2745 | | | | 500 | | | | | 505 | | | | | 510 | | | |
| 2746 | | | | | | | | | | | | | | | | | |
| 2747 | Gln | Cys | Glu | Cys | Pro | Thr | Gly | Phe | Thr | Gly | His | Leu | Cys | Gln | Tyr | Asp | |
| 2748 | | | 515 | | | | | 520 | | | | | 525 | | | | |
| 2749 | | | | | | | | | | | | | | | | | |
| 2750 | Val | Asp | Glu | Cys | Ala | Ser | Thr | Pro | Cys | Lys | Asn | Gly | Ala | Lys | Cys | Leu | |
| 2751 | | 530 | | | | | 535 | | | | | 540 | | | | | |
| 2752 | | | | | | | | | | | | | | | | | |
| 2753 | Asp | Gly | Pro | Asn | Thr | Tyr | Thr | Cys | Val | Cys | Thr | Glu | Gly | Tyr | Thr | Gly | |
| 2754 | 545 | | | | | 550 | | | | | 555 | | | | | 560 | |

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:13:35
INPUT SET: S7068.raw

2755
 2756 Thr His Cys Glu Val Asp Ile Asp Glu Cys Asp Pro Asp Pro Cys His
 2757 565 570 575
 2758
 2759 Tyr Gly Ser Cys Lys Asp Gly Val Ala Thr Phe Thr Cys Leu Cys Arg
 2760 580 585 590
 2761
 2762 Pro Gly Tyr Thr Gly His His Cys Glu Thr Asn Ile Asn Glu Cys Ser
 2763 595 600 605
 2764
 2765 Ser Gln Pro Cys Arg Leu Arg Gly Thr Cys Gln Asp Pro Asp Asn Ala
 2766 610 615 620
 2767
 2768 Tyr Leu Cys Phe Cys Leu Lys Gly Thr Thr Gly Pro Asn Cys Glu Ile
 2769 625 630 635 640
 2770
 2771 Asn Leu Asp Asp Cys Ala Ser Ser Pro Cys Asp Ser Gly Thr Cys Leu
 2772 645 650 655
 2773
 2774 Asp Lys Ile Asp Gly Tyr Glu Cys Ala Cys Glu Pro Gly Tyr Thr Gly
 2775 660 665 670
 2776
 2777 Ser Met Cys Asn Ser Asn Ile Asp Glu Cys Ala Gly Asn Pro Cys His
 2778 675 680 685
 2779
 2780 Asn Gly Gly Thr Cys Glu Asp Gly Ile Asn Gly Phe Thr Cys Arg Cys
 2781 690 695 700
 2782
 2783 Pro Glu Gly Tyr His Asp Pro Thr Cys Leu Ser Glu Val Asn Glu Cys
 2784 705 710 715 720
 2785
 2786 Asn Ser Asn Pro Cys Val His Gly Ala Cys Arg Asp Ser Leu Asn Gly
 2787 725 730 735
 2788
 2789 Tyr Lys Cys Asp Cys Asp Pro Gly Trp Ser Gly Thr Asn Cys Asp Ile
 2790 740 745 750
 2791
 2792 Asn Asn Asn Glu Cys Glu Ser Asn Pro Cys Val Asn Gly Gly Thr Cys
 2793 755 760 765
 2794
 2795 Lys Asp Met Thr Ser Gly Ile Val Cys Thr Cys Arg Glu Gly Phe Ser
 2796 770 775 780
 2797
 2798 Gly Pro Asn Cys Gln Thr Asn Ile Asn Glu Cys Ala Ser Asn Pro Cys
 2799 785 790 795 800
 2800
 2801 Leu Asn Lys Gly Thr Cys Ile Asp Asp Val Ala Gly Tyr Lys Cys Asn
 2802 805 810 815
 2803
 2804 Cys Leu Leu Pro Tyr Thr Gly Ala Thr Cys Glu Val Val Leu Ala Pro
 2805 820 825 830

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:13:42

INPUT SET: S7068.raw

```

2806
2807      Cys Ala Pro Ser Pro Cys Arg Asn Gly Gly Glu Cys Arg Gln Ser Glu
2808                835                840                845
2809
2810      Asp Tyr Glu Ser Phe Ser Cys Val Cys Pro Thr Ala Gly Ala Lys Gly
2811                850                855                860
2812
2813      Gln Thr Cys Glu Val Asp Ile Asn Glu Cys Val Leu Ser Pro Cys Arg
2814      865                870                875                880
2815
2816      His Gly Ala Ser Cys Gln Asn Thr His Gly Gly Tyr Arg Cys His Cys
2817                885                890                895
2818
2819      Gln Ala Gly Tyr Ser Gly Arg Asn Cys Glu Thr Asp Ile Asp Asp Cys
2820                900                905                910
2821
2822      Arg Pro Asn Pro Cys His Asn Gly Gly Ser Cys Thr Asp Gly Ile Asn
2823                915                920                925
2824
2825      Thr Ala Phe Cys Asp Cys Leu Pro Gly Phe Arg Gly Thr Phe Cys Glu
2826                930                935                940
2827
2828      Glu Asp Ile Asn Glu Cys Ala Ser Asp Pro Cys Arg Asn Gly Ala Asn
2829      945                950                955                960
2830
2831      Cys Thr Asp Cys Val Asp Ser Tyr Thr Cys Thr Cys Pro Ala Gly Phe
2832                965                970                975
2833
2834      Ser Gly Ile His Cys Glu Asn Asn Thr Pro Asp Cys Thr Glu Ser Ser
2835                980                985                990
2836
2837      Cys Phe Asn Gly Gly Thr Cys Val Asp Gly Ile Asn Ser Phe Thr Cys
2838                995                1000                1005
2839
2840      Leu Cys Pro Pro Gly Phe Thr Gly Ser Tyr Cys Gln His Val Val Asn
2841                1010                1015                1020
2842
2843      Glu Cys Asp Ser Arg Pro Cys Leu Leu Gly Gly Thr Cys Gln Asp Gly
2844      1025                1030                1035                1040
2845
2846      Arg Gly Leu His Arg Cys Thr Cys Pro Gln Gly Tyr Thr Gly Pro Asn
2847                1045                1050                1055
2848
2849      Cys Gln Asn Leu Val His Trp Cys Asp Ser Ser Pro Cys Lys Asn Gly
2850                1060                1065                1070
2851
2852      Gly Lys Cys Trp Gln Thr His Thr Gln Tyr Arg Cys Glu Cys Pro Ser
2853                1075                1080                1085
2854
2855      Gly Trp Thr Gly Leu Tyr Cys Asp Val Pro Ser Val Ser Cys Glu Val
2856                1090                1095                1100

```


RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:13:49

INPUT SET: S7068.raw

2857
 2858 Ala Ala Gln Arg Gln Gly Val Asp Val Ala Arg Leu Cys Gln His Gly
 2859 1105 1110 1115 1120
 2860
 2861 Gly Leu Cys Val Asp Ala Gly Asn Thr His His Cys Arg Cys Gln Ala
 2862 1125 1130 1135
 2863
 2864 Gly Tyr Thr Gly Ser Tyr Cys Glu Asp Leu Val Asp Glu Cys Ser Pro
 2865 1140 1145 1150
 2866
 2867 Ser Pro Cys Gln Asn Gly Ala Thr Cys Thr Asp Tyr Leu Gly Gly Tyr
 2868 1155 1160 1165
 2869
 2870 Ser Cys Lys Cys Val Ala Gly Tyr His Gly Val Asn Cys Ser Glu Glu
 2871 1170 1175 1180
 2872
 2873 Ile Asp Glu Cys Leu Ser His Pro Cys Gln Asn Gly Gly Thr Cys Leu
 2874 1185 1190 1195 1200
 2875
 2876 Asp Leu Pro Asn Thr Tyr Lys Cys Ser Cys Pro Arg Gly Thr Gln Gly
 2877 1205 1210 1215
 2878
 2879 Val His Cys Glu Ile Asn Val Asp Asp Cys Asn Pro Pro Val Asp Pro
 2880 1220 1225 1230
 2881
 2882 Val Ser Arg Ser Pro Lys Cys Phe Asn Asn Gly Thr Cys Val Asp Gln
 2883 1235 1240 1245
 2884
 2885 Val Gly Gly Tyr Ser Cys Thr Cys Pro Pro Gly Phe Val Gly Glu Arg
 2886 1250 1255 1260
 2887
 2888 Cys Glu Gly Asp Val Asn Glu Cys Leu Ser Asn Pro Cys Asp Ala Arg
 2889 1265 1270 1275 1280
 2890
 2891 Gly Thr Gln Asn Cys Val Gln Arg Val Asn Asp Phe His Cys Glu Cys
 2892 1285 1290 1295
 2893
 2894 Arg Ala Gly His Thr Gly Arg Arg Cys Glu Ser Val Ile Asn Gly Cys
 2895 1300 1305 1310
 2896
 2897 Lys Gly Lys Pro Cys Lys Asn Gly Gly Thr Cys Ala Val Ala Ser Asn
 2898 1315 1320 1325
 2899
 2900 Thr Ala Arg Gly Phe Ile Cys Lys Cys Pro Ala Gly Phe Glu Gly Ala
 2901 1330 1335 1340
 2902
 2903 Thr Cys Glu Asn Asp Ala Arg Thr Cys Gly Ser Leu Arg Cys Leu Asn
 2904 1345 1350 1355 1360
 2905
 2906 Gly Gly Thr Cys Ile Ser Gly Pro Arg Ser Pro Thr Cys Leu Cys Leu
 2907 1365 1370 1375

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:13:56

INPUT SET: S7068.raw

2908
 2909 Gly Pro Phe Thr Gly Pro Glu Cys Gln Phe Pro Ala Ser Ser Pro Cys
 2910 1380 1385 1390
 2911
 2912 Leu Gly Gly Asn Pro Cys Tyr Asn Gln Gly Thr Cys Glu Pro Thr Ser
 2913 1395 1400 1405
 2914
 2915 Glu Ser Pro Phe Tyr Arg Cys Leu Cys Pro Ala Lys Phe Asn Gly Leu
 2916 1410 1415 1420
 2917
 2918 Leu Cys His Ile Leu Asp Tyr Ser Phe Gly Gly Gly Ala Gly Arg Asp
 2919 1425 1430 1435 1440
 2920
 2921 Ile Pro Pro Pro Leu Ile Glu Glu Ala Cys Glu Leu Pro Glu Cys Gln
 2922 1445 1450 1455
 2923
 2924 Glu Asp Ala Gly Asn Lys Val Cys Ser Leu Gln Cys Asn Asn His Ala
 2925 1460 1465 1470
 2926
 2927 Cys Gly Trp Asp Gly Gly Asp Cys Ser Leu Asn Phe Asn Asp Pro Trp
 2928 1475 1480 1485
 2929
 2930 Lys Asn Cys Thr Gln Ser Leu Gln Cys Trp Lys Tyr Phe Ser Asp Gly
 2931 1490 1495 1500
 2932
 2933 His Cys Asp Ser Gln Cys Asn Ser Ala Gly Cys Leu Phe Asp Gly Phe
 2934 1505 1510 1515 1520
 2935
 2936 Asp Cys Gln Arg Ala Glu Gly Gln Cys Asn Pro Leu Tyr Asp Gln Tyr
 2937 1525 1530 1535
 2938
 2939 Cys Lys Asp His Phe Ser Asp Gly His Cys Asp Gln Gly Cys Asn Ser
 2940 1540 1545 1550
 2941
 2942 Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys Ala Glu His Val Pro Glu
 2943 1555 1560 1565
 2944
 2945 Arg Leu Ala Ala Gly Thr Leu Val Val Val Val Leu Met Pro Pro Glu
 2946 1570 1575 1580
 2947
 2948 Gln Leu Arg Asn Ser Ser Phe His Phe Leu Arg Glu Leu Ser Arg Val
 2949 1585 1590 1595 1600
 2950
 2951 Leu His Thr Asn Val Val Phe Lys Arg Asp Ala His Gly Gln Gln Met
 2952 1605 1610 1615
 2953
 2954 Ile Phe Pro Tyr Tyr Gly Arg Glu Glu Glu Leu Arg Lys His Pro Ile
 2955 1620 1625 1630
 2956
 2957 Lys Arg Ala Ala Glu Gly Trp Ala Ala Pro Asp Ala Leu Leu Gly Gln
 2958 1635 1640 1645

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:14:03
INPUT SET: S7068.raw

2959
 2960 Val Lys Ala Ser Leu Leu Pro Gly Gly Ser Glu Gly Gly Arg Arg Arg
 2961 1650 1655 1660
 2962
 2963 Arg Glu Leu Asp Pro Met Asp Val Arg Gly Ser Ile Val Tyr Leu Glu
 2964 1665 1670 1675 1680
 2965
 2966 Ile Asp Asn Arg Gln Cys Val Gln Ala Ser Ser Gln Cys Phe Gln Ser
 2967 1685 1690 1695
 2968
 2969 Ala Thr Asp Val Ala Ala Phe Leu Gly Ala Leu Ala Ser Leu Gly Ser
 2970 1700 1705 1710
 2971
 2972 Leu Asn Ile Pro Tyr Lys Ile Glu Ala Val Gln Ser Glu Thr Val Glu
 2973 1715 1720 1725
 2974
 2975 Pro Pro Pro Pro Ala Gln Leu His Phe Met Tyr Val Ala Ala Ala Ala
 2976 1730 1735 1740
 2977
 2978 Phe Val Leu Leu Phe Phe Val Gly Cys Gly Val Leu Leu Ser Arg Lys
 2979 1745 1750 1755 1760
 2980
 2981 Arg Arg Arg Gln His Gly Gln Leu Trp Phe Pro Glu Gly Phe Lys Val
 2982 1765 1770 1775
 2983
 2984 Ser Glu Ala Ser Lys Lys Lys Arg Arg Glu Glu Leu Gly Glu Asp Ser
 2985 1780 1785 1790
 2986
 2987 Val Gly Leu Lys Pro Leu Lys Asn Ala Ser Asp Gly Ala Leu Met Asp
 2988 1795 1800 1805
 2989
 2990 Asp Asn Gln Asn Glu Trp Gly Asp Glu Asp Leu Glu Thr Lys Lys Phe
 2991 1810 1815 1820
 2992
 2993 Arg Phe Glu Glu Pro Val Val Leu Pro Asp Leu Asp Asp Gln Thr Asp
 2994 1825 1830 1835 1840
 2995
 2996 His Arg Gln Trp Thr Gln Gln His Leu Asp Ala Ala Asp Leu Arg Met
 2997 1845 1850 1855
 2998
 2999 Ser Ala Met Ala Pro Thr Pro Pro Gln Gly Glu Val Asp Ala Asp Cys
 3000 1860 1865 1870
 3001
 3002 Met Asp Val Asn Val Arg Gly Pro Asp Gly Phe Thr Pro Leu Met Ile
 3003 1875 1880 1885
 3004
 3005 Ala Ser Cys Ser Gly Gly Gly Leu Glu Thr Gly Asn Ser Glu Glu Glu
 3006 1890 1895 1900
 3007
 3008 Glu Asp Ala Pro Ala Val Ile Ser Asp Phe Ile Tyr Gln Gly Ala Ser
 3009 1905 1910 1915 1920

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:14:10

INPUT SET: S7068.raw

3010
 3011 Leu His Asn Gln Thr Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala
 3012 1925 1930 1935
 3013
 3014 Ala Arg Tyr Ser Arg Ser Asp Ala Ala Lys Arg Leu Leu Glu Ala Ser
 3015 1940 1945 1950
 3016
 3017 Ala Asp Ala Asn Ile Gln Asp Asn Met Gly Arg Thr Pro Leu His Ala
 3018 1955 1960 1965
 3019
 3020 Ala Val Ser Ala Asp Ala Gln Gly Val Phe Gln Ile Leu Ile Arg Asn
 3021 1970 1975 1980
 3022
 3023 Arg Ala Thr Asp Leu Asp Ala Arg Met His Asp Gly Thr Thr Pro Leu
 3024 1985 1990 1995 2000
 3025
 3026 Ile Leu Ala Ala Arg Leu Ala Val Glu Gly Met Leu Glu Asp Leu Ile
 3027 2005 2010 2015
 3028
 3029 Asn Ser His Ala Asp Val Asn Ala Val Asp Asp Leu Gly Lys Ser Ala
 3030 2020 2025 2030
 3031
 3032 Leu His Trp Ala Ala Ala Val Asn Asn Val Asp Ala Ala Val Val Leu
 3033 2035 2040 2045
 3034
 3035 Leu Lys Asn Gly Ala Asn Lys Asp Met Gln Asn Asn Arg Glu Glu Thr
 3036 2050 2055 2060
 3037
 3038 Pro Leu Phe Leu Ala Ala Arg Glu Gly Ser Tyr Glu Thr Ala Lys Val
 3039 2065 2070 2075 2080
 3040
 3041 Leu Leu Asp His Phe Ala Asn Arg Asp Ile Thr Asp His Met Asp Arg
 3042 2085 2090 2095
 3043
 3044 Leu Pro Arg Asp Ile Ala Gln Glu Arg Met His His Asp Ile Val Arg
 3045 2100 2105 2110
 3046
 3047 Leu Leu Asp Glu Tyr Asn Leu Val Arg Ser Pro Gln Leu His Gly Ala
 3048 2115 2120 2125
 3049
 3050 Pro Leu Gly Gly Thr Pro Thr Leu Ser Pro Pro Leu Cys Ser Pro Asn
 3051 2130 2135 2140
 3052
 3053 Gly Tyr Leu Gly Ser Leu Lys Pro Gly Val Gln Gly Lys Lys Val Arg
 3054 2145 2150 2155 2160
 3055
 3056 Lys Pro Ser Ser Lys Gly Leu Ala Cys Gly Ser Lys Glu Ala Lys Asp
 3057 2165 2170 2175
 3058
 3059 Leu Lys Ala Arg Arg Lys Lys Ser Gln Asp Gly Lys Gly Cys Leu Leu
 3060 2180 2185 2190

RAW SEQUENCE LISTING
PATENT APPLICATION US/08/083,590

 DATE: 12/16/93
 TIME: 13:14:16

INPUT SET: S7068.raw

```

3061
3062      Asp Ser Ser Gly Met Leu Ser Pro Val Asp Ser Leu Glu Ser Pro His
3063              2195                      2200                      2205
3064
3065      Gly Tyr Leu Ser Asp Val Ala Ser Pro Pro Leu Leu Pro Ser Pro Phe
3066              2210                      2215                      2220
3067
3068      Gln Gln Ser Pro Ser Val Pro Leu Asn His Leu Pro Gly Met Pro Asp
3069      2225                      2230                      2235                      2240
3070
3071      Thr His Leu Gly Ile Gly His Leu Asn Val Ala Ala Lys Pro Glu Met
3072              2245                      2250                      2255
3073
3074      Ala Ala Leu Gly Gly Gly Gly Arg Leu Ala Phe Glu Thr Gly Pro Pro
3075              2260                      2265                      2270
3076
3077      Arg Leu Ser His Leu Pro Val Ala Ser Gly Thr Ser Thr Val Leu Gly
3078              2275                      2280                      2285
3079
3080      Ser Ser Ser Gly Gly Ala Leu Asn Phe Thr Val Gly Gly Ser Thr Ser
3081      2290                      2295                      2300
3082
3083      Leu Asn Gly Gln Cys Glu Trp Leu Ser Arg Leu Gln Ser Gly Met Val
3084      2305                      2310                      2315                      2320
3085
3086      Pro Asn Gln Tyr Asn Pro Leu Arg Gly Ser Val Ala Pro Gly Pro Leu
3087              2325                      2330                      2335
3088
3089      Ser Thr Gln Ala Pro Ser Leu Gln His Gly Met Val Gly Pro Leu His
3090              2340                      2345                      2350
3091
3092      Ser Ser Leu Ala Ala Ser Ala Leu Ser Gln Met Met Ser Tyr Gln Gly
3093      2355                      2360                      2365
3094
3095      Leu Pro Ser Thr Arg Leu Ala Thr Gln Pro His Leu Val Gln Thr Gln
3096      2370                      2375                      2380
3097
3098      Gln Val Gln Pro Gln Asn Leu Gln Met Gln Gln Gln Asn Leu Gln Pro
3099      2385                      2390                      2395                      2400
3100
3101      Ala Asn Ile Gln Gln Gln Gln Ser Leu Gln Pro Pro Pro Pro Pro Pro
3102              2405                      2410                      2415
3103
3104      Gln Pro His Leu Gly Val Ser Ser Ala Ala Ser Gly His Leu Gly Arg
3105              2420                      2425                      2430
3106
3107      Ser Phe Leu Ser Gly Glu Pro Ser Gln Ala Asp Val Gln Pro Leu Gly
3108      2435                      2440                      2445
3109
3110      Pro Ser Ser Leu Ala Val His Thr Ile Leu Pro Gln Glu Ser Pro Ala
3111      2450                      2455                      2460

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RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:14:23

INPUT SET: S7068.raw

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3112
3113      Leu Pro Thr Ser Leu Pro Ser Ser Leu Val Pro Pro Val Thr Ala Ala
3114      2465                      2470                      2475                      2480
3115
3116      Gln Phe Leu Thr Pro Pro Ser Gln His Ser Tyr Ser Ser Pro Val Glu
3117                      2485                      2490                      2495
3118
3119      Asn Thr Pro Ser His Gln Leu Gln Val Pro Glu His Pro Phe Leu Thr
3120                      2500                      2505                      2510
3121
3122      Pro Ser Pro Glu Ser Pro Asp Gln Trp Ser Ser Ser Ser Pro His Ser
3123                      2515                      2520                      2525
3124
3125      Asn Val Ser Asp Trp Ser Glu Gly Val Ser Ser Pro Pro Thr Ser Met
3126                      2530                      2535                      2540
3127
3128      Gln Ser Gln Ile Ala Arg Ile Pro Glu Ala Phe Lys
3129      2545                      2550                      2555
3130

```

(2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9723 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 10..7419

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

```

3148
3149      GGAATTCCG CCC GCC CTG CGC CCC GCT CTG CTG TGG GCG CTG CTG GCG      48
3150      Pro Ala Leu Arg Pro Ala Leu Leu Trp Ala Leu Leu Ala
3151      1                      5                      10
3152
3153      CTC TGG CTG TGC TGC GCG GCC CCC GCG CAT GCA TTG CAG TGT CGA GAT      96
3154      Leu Trp Leu Cys Cys Ala Ala Pro Ala His Ala Leu Gln Cys Arg Asp
3155      15                      20                      25
3156
3157      GGC TAT GAA CCC TGT GTA AAT GAA GGA ATG TGT GTT ACC TAC CAC AAT      144
3158      Gly Tyr Glu Pro Cys Val Asn Glu Gly Met Cys Val Thr Tyr His Asn
3159      30                      35                      40                      45
3160
3161      GGC ACA GGA TAC TGC AAA TGT CCA GAA GGC TTC TTG GGG GAA TAT TGT      192
3162      Gly Thr Gly Tyr Cys Lys Cys Pro Glu Gly Phe Leu Gly Glu Tyr Cys

```

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:14:30

INPUT SET: S7068.raw

| | | | | | | | |
|------|---|-----|-----|-----|-----|-----|-----|
| 3163 | | 50 | | 55 | | 60 | |
| 3164 | | | | | | | |
| 3165 | CAA CAT CGA GAC CCC TGT GAG AAG AAC CGC TGC CAG AAT GGT GGG ACT | | | | | | 240 |
| 3166 | Gln His Arg Asp Pro Cys Glu Lys Asn Arg Cys Gln Asn Gly Gly Thr | | | | | | |
| 3167 | | 65 | | 70 | | 75 | |
| 3168 | | | | | | | |
| 3169 | TGT GTG GCC CAG GCC ATG CTG GGG AAA GCC ACG TGC CGA TGT GCC TCA | | | | | | 288 |
| 3170 | Cys Val Ala Gln Ala Met Leu Gly Lys Ala Thr Cys Arg Cys Ala Ser | | | | | | |
| 3171 | | 80 | | 85 | | 90 | |
| 3172 | | | | | | | |
| 3173 | GGG TTT ACA GGA GAG GAC TGC CAG TAC TCA ACA TCT CAT CCA TGC TTT | | | | | | 336 |
| 3174 | Gly Phe Thr Gly Glu Asp Cys Gln Tyr Ser Thr Ser His Pro Cys Phe | | | | | | |
| 3175 | | 95 | | 100 | | 105 | |
| 3176 | | | | | | | |
| 3177 | GTG TCT CGA CCC TGC CTG AAT GGC GGC ACA TGC CAT ATG CTC AGC CGG | | | | | | 384 |
| 3178 | Val Ser Arg Pro Cys Leu Asn Gly Gly Thr Cys His Met Leu Ser Arg | | | | | | |
| 3179 | 110 | | 115 | | 120 | | 125 |
| 3180 | | | | | | | |
| 3181 | GAT ACC TAT GAG TGC ACC TGT CAA GTC GGG TTT ACA GGT AAG GAG TGC | | | | | | 432 |
| 3182 | Asp Thr Tyr Glu Cys Thr Cys Gln Val Gly Phe Thr Gly Lys Glu Cys | | | | | | |
| 3183 | | 130 | | 135 | | 140 | |
| 3184 | | | | | | | |
| 3185 | CAA TGG ACG GAT GCC TGC CTG TCT CAT CCC TGT GCA AAT GGA AGT ACC | | | | | | 480 |
| 3186 | Gln Trp Thr Asp Ala Cys Leu Ser His Pro Cys Ala Asn Gly Ser Thr | | | | | | |
| 3187 | | 145 | | 150 | | 155 | |
| 3188 | | | | | | | |
| 3189 | TGT ACC ACT GTG GCC AAC CAG TTC TCC TGC AAA TGC CTC ACA GGC TTC | | | | | | 528 |
| 3190 | Cys Thr Thr Val Ala Asn Gln Phe Ser Cys Lys Cys Leu Thr Gly Phe | | | | | | |
| 3191 | | 160 | | 165 | | 170 | |
| 3192 | | | | | | | |
| 3193 | ACA GGG CAG AAA TGT GAG ACT GAT GTC AAT GAG TGT GAC ATT CCA GGA | | | | | | 576 |
| 3194 | Thr Gly Gln Lys Cys Glu Thr Asp Val Asn Glu Cys Asp Ile Pro Gly | | | | | | |
| 3195 | | 175 | | 180 | | 185 | |
| 3196 | | | | | | | |
| 3197 | CAC TGC CAG CAT GGT GGC ACC TGC CTC AAC CTG CCT GGT TCC TAC CAG | | | | | | 624 |
| 3198 | His Cys Gln His Gly Gly Thr Cys Leu Asn Leu Pro Gly Ser Tyr Gln | | | | | | |
| 3199 | 190 | | 195 | | 200 | | 205 |
| 3200 | | | | | | | |
| 3201 | TGC CAG TGC CCT CAG GGC TTC ACA GGC CAG TAC TGT GAC AGC CTG TAT | | | | | | 672 |
| 3202 | Cys Gln Cys Pro Gln Gly Phe Thr Gly Gln Tyr Cys Asp Ser Leu Tyr | | | | | | |
| 3203 | | 210 | | 215 | | 220 | |
| 3204 | | | | | | | |
| 3205 | GTG CCC TGT GCA CCC TCA CCT TGT GTC AAT GGA GGC ACC TGT CGG CAG | | | | | | 720 |
| 3206 | Val Pro Cys Ala Pro Ser Pro Cys Val Asn Gly Gly Thr Cys Arg Gln | | | | | | |
| 3207 | | 225 | | 230 | | 235 | |
| 3208 | | | | | | | |
| 3209 | ACT GGT GAC TTC ACT TTT GAG TGC AAC TGC CTT CCA GGT TTT GAA GGG | | | | | | 768 |
| 3210 | Thr Gly Asp Phe Thr Phe Glu Cys Asn Cys Leu Pro Gly Phe Glu Gly | | | | | | |
| 3211 | | 240 | | 245 | | 250 | |
| 3212 | | | | | | | |
| 3213 | AGC ACC TGT GAG AGG AAT ATT GAT GAC TGC CCT AAC CAC AGG TGT CAG | | | | | | 816 |

DATE: 12/16/93
TIME: 13:14:37

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|------|
| 3214 | Ser | Thr | Cys | Glu | Arg | Asn | Ile | Asp | Asp | Cys | Pro | Asn | His | Arg | Cys | Gln | |
| 3215 | | 255 | | | | | 260 | | | | | 265 | | | | | |
| 3216 | | | | | | | | | | | | | | | | | |
| 3217 | AAT | GGA | GGG | GTT | TGT | GTG | GAT | GGG | GTC | AAC | ACT | TAC | AAC | TGC | CGC | TGT | 864 |
| 3218 | Asn | Gly | Gly | Val | Cys | Val | Asp | Gly | Val | Asn | Thr | Tyr | Asn | Cys | Arg | Cys | |
| 3219 | 270 | | | | | 275 | | | | | 280 | | | | | 285 | |
| 3220 | | | | | | | | | | | | | | | | | |
| 3221 | CCC | CCA | CAA | TGG | ACA | GGA | CAG | TTC | TGC | ACA | GAG | GAT | GTG | GAT | GAA | TGC | 912 |
| 3222 | Pro | Pro | Gln | Trp | Thr | Gly | Gln | Phe | Cys | Thr | Glu | Asp | Val | Asp | Glu | Cys | |
| 3223 | | | | | 290 | | | | | 295 | | | | | 300 | | |
| 3224 | | | | | | | | | | | | | | | | | |
| 3225 | CTG | CTG | CAG | CCC | AAT | GCC | TGT | CAA | AAT | GGG | GGC | ACC | TGT | GCC | AAC | CGC | 960 |
| 3226 | Leu | Leu | Gln | Pro | Asn | Ala | Cys | Gln | Asn | Gly | Gly | Thr | Cys | Ala | Asn | Arg | |
| 3227 | | | | 305 | | | | | 310 | | | | | 315 | | | |
| 3228 | | | | | | | | | | | | | | | | | |
| 3229 | AAT | GGA | GGC | TAT | GGC | TGT | GTA | TGT | GTC | AAC | GGC | TGG | AGT | GGA | GAT | GAC | 1008 |
| 3230 | Asn | Gly | Gly | Tyr | Gly | Cys | Val | Cys | Val | Asn | Gly | Trp | Ser | Gly | Asp | Asp | |
| 3231 | | | 320 | | | | | 325 | | | | | 330 | | | | |
| 3232 | | | | | | | | | | | | | | | | | |
| 3233 | TGC | AGT | GAG | AAC | ATT | GAT | GAT | TGT | GCC | TTC | GCC | TCC | TGT | ACT | CCA | GGC | 1056 |
| 3234 | Cys | Ser | Glu | Asn | Ile | Asp | Asp | Cys | Ala | Phe | Ala | Ser | Cys | Thr | Pro | Gly | |
| 3235 | | 335 | | | | 340 | | | | | | 345 | | | | | |
| 3236 | | | | | | | | | | | | | | | | | |
| 3237 | TCC | ACC | TGC | ATC | GAC | CGT | GTG | GCC | TCC | TTC | TCT | TGC | ATG | TGC | CCA | GAG | 1104 |
| 3238 | Ser | Thr | Cys | Ile | Asp | Arg | Val | Ala | Ser | Phe | Ser | Cys | Met | Cys | Pro | Glu | |
| 3239 | 350 | | | | | 355 | | | | | 360 | | | | | 365 | |
| 3240 | | | | | | | | | | | | | | | | | |
| 3241 | GGG | AAG | GCA | GGT | CTC | CTG | TGT | CAT | CTG | GAT | GAT | GCA | TGC | ATC | AGC | AAT | 1152 |
| 3242 | Gly | Lys | Ala | Gly | Leu | Leu | Cys | His | Leu | Asp | Asp | Ala | Cys | Ile | Ser | Asn | |
| 3243 | | | | | 370 | | | | | 375 | | | | | 380 | | |
| 3244 | | | | | | | | | | | | | | | | | |
| 3245 | CCT | TGC | CAC | AAG | GGG | GCA | CTG | TGT | GAC | ACC | AAC | CCC | CTA | AAT | GGG | CAA | 1200 |
| 3246 | Pro | Cys | His | Lys | Gly | Ala | Leu | Cys | Asp | Thr | Asn | Pro | Leu | Asn | Gly | Gln | |
| 3247 | | | | 385 | | | | | 390 | | | | | 395 | | | |
| 3248 | | | | | | | | | | | | | | | | | |
| 3249 | TAT | ATT | TGC | ACC | TGC | CCA | CAA | GGC | TAC | AAA | GGG | GCT | GAC | TGC | ACA | GAA | 1248 |
| 3250 | Tyr | Ile | Cys | Thr | Cys | Pro | Gln | Gly | Tyr | Lys | Gly | Ala | Asp | Cys | Thr | Glu | |
| 3251 | | | 400 | | | | | 405 | | | | | 410 | | | | |
| 3252 | | | | | | | | | | | | | | | | | |
| 3253 | GAT | GTG | GAT | GAA | TGT | GCC | ATG | GCC | AAT | AGC | AAT</ | | | | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:14:44

INPUT SET: S7068.raw

| | | |
|------|---|------|
| 3265 | GAC CCC TGC CAG AAT GAT GCT ACC TGT CTG GAT AAG ATT GGA GGC TTC | 1440 |
| 3266 | Asp Pro Cys Gln Asn Asp Ala Thr Cys Leu Asp Lys Ile Gly Gly Phe | |
| 3267 | 465 470 475 | |
| 3268 | | |
| 3269 | ACA TGT CTG TGC ATG CCA GGT TTC AAA GGT GTG CAT TGT GAA TTA GAA | 1488 |
| 3270 | Thr Cys Leu Cys Met Pro Gly Phe Lys Gly Val His Cys Glu Leu Glu | |
| 3271 | 480 485 490 | |
| 3272 | | |
| 3273 | ATA AAT GAA TGT CAG AGC AAC CCT TGT GTG AAC AAT GGG CAG TGT GTG | 1536 |
| 3274 | Ile Asn Glu Cys Gln Ser Asn Pro Cys Val Asn Asn Gly Gln Cys Val | |
| 3275 | 495 500 505 | |
| 3276 | | |
| 3277 | GAT AAA GTC AAT CGT TTC CAG TGC CTG TGT CCT CCT GGT TTC ACT GGG | 1584 |
| 3278 | Asp Lys Val Asn Arg Phe Gln Cys Leu Cys Pro Pro Gly Phe Thr Gly | |
| 3279 | 510 515 520 525 | |
| 3280 | | |
| 3281 | CCA GTT TGC CAG ATT GAT ATT GAT GAC TGT TCC AGT ACT CCG TGT CTG | 1632 |
| 3282 | Pro Val Cys Gln Ile Asp Ile Asp Asp Cys Ser Ser Thr Pro Cys Leu | |
| 3283 | 530 535 540 | |
| 3284 | | |
| 3285 | AAT GGG GCA AAG TGT ATC GAT CAC CCG AAT GGC TAT GAA TGC CAG TGT | 1680 |
| 3286 | Asn Gly Ala Lys Cys Ile Asp His Pro Asn Gly Tyr Glu Cys Gln Cys | |
| 3287 | 545 550 555 | |
| 3288 | | |
| 3289 | GCC ACA GGT TTC ACT GGT GTG TTG TGT GAG GAG AAC ATT GAC AAC TGT | 1728 |
| 3290 | Ala Thr Gly Phe Thr Gly Val Leu Cys Glu Glu Asn Ile Asp Asn Cys | |
| 3291 | 560 565 570 | |
| 3292 | | |
| 3293 | GAC CCC GAT CCT TGC CAC CAT GGT CAG TGT CAG GAT GGT ATT GAT TCC | 1776 |
| 3294 | Asp Pro Asp Pro Cys His His Gly Gln Cys Gln Asp Gly Ile Asp Ser | |
| 3295 | 575 580 585 | |
| 3296 | | |
| 3297 | TAC ACC TGC ATC TGC AAT CCC GGG TAC ATG GGC GCC ATC TGC AGT GAC | 1824 |
| 3298 | Tyr Thr Cys Ile Cys Asn Pro Gly Tyr Met Gly Ala Ile Cys Ser Asp | |
| 3299 | 590 595 600 605 | |
| 3300 | | |
| 3301 | CAG ATT GAT GAA TGT TAC AGC AGC CCT TGC CTG AAC GAT GGT CGC TGC | 1872 |
| 3302 | Gln Ile Asp Glu Cys Tyr Ser Ser Pro Cys Leu Asn Asp Gly Arg Cys | |
| 3303 | 610 615 620 | |
| 3304 | | |
| 3305 | ATT GAC CTG GTC AAT GGC TAC CAG TGC AAC TGC CAG CCA GGC ACG TCA | 1920 |
| 3306 | Ile Asp Leu Val Asn Gly Tyr Gln Cys Asn Cys Gln Pro Gly Thr Ser | |
| 3307 | 625 630 635 | |
| 3308 | | |
| 3309 | GGG GTT AAT TGT GAA ATT AAT TTT GAT GAC TGT GCA AGT AAC CCT TGT | 1968 |
| 3310 | Gly Val Asn Cys Glu Ile Asn Phe Asp Asp Cys Ala Ser Asn Pro Cys | |
| 3311 | 640 645 650 | |
| 3312 | | |
| 3313 | ATC CAT GGA ATC TGT ATG GAT GGC ATT AAT CGC TAC AGT TGT GTC TGC | 2016 |
| 3314 | Ile His Gly Ile Cys Met Asp Gly Ile Asn Arg Tyr Ser Cys Val Cys | |
| 3315 | 655 660 665 | |

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|------|
| 3316 | | | | | | | | | | | | | | | | | | |
| 3317 | TCA | CCA | GGA | TTC | ACA | GGG | CAG | AGA | TGT | AAC | ATT | GAC | ATT | GAT | GAG | TGT | | 2064 |
| 3318 | Ser | Pro | Gly | Phe | Thr | Gly | Gln | Arg | Cys | Asn | Ile | Asp | Ile | Asp | Glu | Cys | | |
| 3319 | 670 | | | | | 675 | | | | | 680 | | | | | 685 | | |
| 3320 | | | | | | | | | | | | | | | | | | |
| 3321 | GCC | TCC | AAT | CCC | TGT | CGC | AAG | GGT | GCA | ACA | TGT | ATC | AAC | GGT | GTG | AAT | | 2112 |
| 3322 | Ala | Ser | Asn | Pro | Cys | Arg | Lys | Gly | Ala | Thr | Cys | Ile | Asn | Gly | Val | Asn | | |
| 3323 | | | | | 690 | | | | | 695 | | | | | 700 | | | |
| 3324 | | | | | | | | | | | | | | | | | | |
| 3325 | GGT | TTC | CGC | TGT | ATA | TGC | CCC | GAG | GGA | CCC | CAT | CAC | CCC | AGC | TGC | TAC | | 2160 |
| 3326 | Gly | Phe | Arg | Cys | Ile | Cys | Pro | Glu | Gly | Pro | His | His | Pro | Ser | Cys | Tyr | | |
| 3327 | | | | 705 | | | | | 710 | | | | | 715 | | | | |
| 3328 | | | | | | | | | | | | | | | | | | |
| 3329 | TCA | CAG | GTG | AAC | GAA | TGC | CTG | AGC | AAT | CCC | TGC | ATC | CAT | GGA | AAC | TGT | | 2208 |
| 3330 | Ser | Gln | Val | Asn | Glu | Cys | Leu | Ser | Asn | Pro | Cys | Ile | His | Gly | Asn | Cys | | |
| 3331 | | | 720 | | | | | 725 | | | | | 730 | | | | | |
| 3332 | | | | | | | | | | | | | | | | | | |
| 3333 | ACT | GGA | GGT | CTC | AGT | GGA | TAT | AAG | TGT | CTC | TGT | GAT | GCA | GGC | TGG | GTT | | 2256 |
| 3334 | Thr | Gly | Gly | Leu | Ser | Gly | Tyr | Lys | Cys | Leu | Cys | Asp | Ala | Gly | Trp | Val | | |
| 3335 | | 735 | | | | | 740 | | | | | 745 | | | | | | |
| 3336 | | | | | | | | | | | | | | | | | | |
| 3337 | GGC | ATC | AAC | TGT | GAA | GTG | GAC | AAA | AAT | GAA | TGC | CTT | TCG | AAT | CCA | TGC | | 2304 |
| 3338 | Gly | Ile | Asn | Cys | Glu | Val | Asp | Lys | Asn | Glu | Cys | Leu | Ser | Asn | Pro | Cys | | |
| 3339 | 750 | | | | | 755 | | | | | 760 | | | | | 765 | | |
| 3340 | | | | | | | | | | | | | | | | | | |
| 3341 | CAG | AAT | GGA | GGA | ACT | TGT | GAC | AAT | CTG | GTG | AAT | GGA | TAC | AGG | TGT | ACT | | 2352 |
| 3342 | Gln | Asn | Gly | Gly | Thr | Cys | Asp | Asn | Leu | Val | Asn | Gly | Tyr | Arg | Cys | Thr | | |
| 3343 | | | | | 770 | | | | | 775 | | | | | 780 | | | |
| 3344 | | | | | | | | | | | | | | | | | | |
| 3345 | TGC | AAG | AAG | GGC | TTT | AAA | GGC | TAT | AAC | TGC | CAG | GTG | AAT | ATT | GAT | GAA | | 2400 |
| 3346 | Cys | Lys | Lys | Gly | Phe | Lys | Gly | Tyr | Asn | Cys | Gln | Val | Asn | Ile | Asp | Glu | | |
| 3347 | | | | 785 | | | | | 790 | | | | | 795 | | | | |
| 3348 | | | | | | | | | | | | | | | | | | |
| 3349 | TGT | GCC | TCA | AAT | CCA | TGC | CTG | AAC | CAA | GGA | ACC | TGC | TTT | GAT | GAC | ATA | | 2448 |
| 3350 | Cys | Ala | Ser | Asn | Pro | Cys | Leu | Asn | Gln | Gly | Thr | Cys | Phe | Asp | Asp | Ile | | |
| 3351 | | | 800 | | | | | 805 | | | | | 810 | | | | | |
| 3352 | | | | | | | | | | | | | | | | | | |
| 3353 | AGT | GGC | TAC | ACT | TGC | CAC | TGT | GTG | CTG | CCA | TAC | ACA | GGC | AAG | AAT | TGT | | 2496 |
| 3354 | Ser | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | |
|------|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|------|--|--|--|
| 3367 | | | | | 865 | | | | 870 | | | | 875 | | | | | | | |
| 3368 | | | | | | | | | | | | | | | | | | | | |
| 3369 | TCC | AAG | CCC | TGC | ATG | AAC | CAT | GGT | CTC | TGC | CAT | AAC | ACC | CAG | GGC | AGC | 2688 | | | |
| 3370 | Ser | Lys | Pro | Cys | Met | Asn | His | Gly | Leu | Cys | His | Asn | Thr | Gln | Gly | Ser | | | | |
| 3371 | 880 | | | | 885 | | | | 890 | | | | | | | | | | | |
| 3372 | | | | | | | | | | | | | | | | | | | | |
| 3373 | TAC | ATG | TGT | GAA | TGT | CCA | CCA | GGC | TTC | AGT | GGT | ATG | GAC | TGT | GAG | GAG | 2736 | | | |
| 3374 | Tyr | Met | Cys | Glu | Cys | Pro | Pro | Gly | Phe | Ser | Gly | Met | Asp | Cys | Glu | Glu | | | | |
| 3375 | 895 | | | | 900 | | | | 905 | | | | | | | | | | | |
| 3376 | | | | | | | | | | | | | | | | | | | | |
| 3377 | GAC | ATT | GAT | GAC | TGC | CTT | GCC | AAT | CCT | TGC | CAG | AAT | GGA | GGT | TCC | TGT | 2784 | | | |
| 3378 | Asp | Ile | Asp | Asp | Cys | Leu | Ala | Asn | Pro | Cys | Gln | Asn | Gly | Gly | Ser | Cys | | | | |
| 3379 | 910 | | | | 915 | | | | 920 | | | | 925 | | | | | | | |
| 3380 | | | | | | | | | | | | | | | | | | | | |
| 3381 | ATG | GAT | GGA | GTG | AAT | ACT | TTC | TCC | TGC | CTC | TGC | CTT | CCG | GGT | TTC | ACT | 2832 | | | |
| 3382 | Met | Asp | Gly | Val | Asn | Thr | Phe | Ser | Cys | Leu | Cys | Leu | Pro | Gly | Phe | Thr | | | | |
| 3383 | | | | | 930 | | | | 935 | | | | 940 | | | | | | | |
| 3384 | | | | | | | | | | | | | | | | | | | | |
| 3385 | GGG | GAT | AAG | TGC | CAG | ACA | GAC | ATG | AAT | GAG | TGT | CTG | AGT | GAA | CCC | TGT | 2880 | | | |
| 3386 | Gly | Asp | Lys | Cys | Gln | Thr | Asp | Met | Asn | Glu | Cys | Leu | Ser | Glu | Pro | Cys | | | | |
| 3387 | 945 | | | | 950 | | | | 955 | | | | | | | | | | | |
| 3388 | | | | | | | | | | | | | | | | | | | | |
| 3389 | AAG | AAT | GGA | GGG | ACC | TGC | TCT | GAC | TAC | GTC | AAC | AGT | TAC | ACT | TGC | AAG | 2928 | | | |
| 3390 | Lys | Asn | Gly | Gly | Thr | Cys | Ser | Asp | Tyr | Val | Asn | Ser | Tyr | Thr | Cys | Lys | | | | |
| 3391 | 960 | | | | 965 | | | | 970 | | | | | | | | | | | |
| 3392 | | | | | | | | | | | | | | | | | | | | |
| 3393 | TGC | CAG | GCA | GGA | TTT | GAT | GGA | GTC | CAT | TGT | GAG | AAC | AAC | ATC | AAT | GAG | 2976 | | | |
| 3394 | Cys | Gln | Ala | Gly | Phe | Asp | Gly | Val | His | Cys | Glu | Asn | Asn | Ile | Asn | Glu | | | | |
| 3395 | 975 | | | | 980 | | | | 985 | | | | | | | | | | | |
| 3396 | | | | | | | | | | | | | | | | | | | | |
| 3397 | TGC | ACT | GAG | AGC | TCC | TGT | TTC | AAT | GGT | GGC | ACA | TGT | GTT | GAT | GGG | ATT | 3024 | | | |
| 3398 | Cys | Thr | Glu | Ser | Ser | Cys | Phe | Asn | Gly | Gly | Thr | Cys | Val | Asp | Gly | Ile | | | | |
| 3399 | 990 | | | | 995 | | | | 1000 | | | | 1005 | | | | | | | |
| 3400 | | | | | | | | | | | | | | | | | | | | |
| 3401 | AAC | TCC | TTC | TCT | TGC | TTG | TGC | CCT | GTG | GGT | TTC | ACT | GGA | TCC | TTC | TGC | 3072 | | | |
| 3402 | Asn | Ser | Phe | Ser | Cys | Leu | Cys | Pro | Val | Gly | Phe | Thr | Gly | Ser | Phe | Cys | | | | |
| 3403 | | | | | 1010 | | | | 1015 | | | | 1020 | | | | | | | |
| 3404 | | | | | | | | | | | | | | | | | | | | |
| 3405 | CTC | CAT | GAG | ATC | AAT | GAA | TGC | AGC | TCT | CAT | CCA | TGC | CTG | AAT | GAG | GGA | 3120 | | | |
| 3406 | Leu | His | Glu | Ile | Asn | Glu | Cys | Ser | Ser | His | Pro | Cys | Leu | Asn | Glu | Gly | | | | |
| 3407 | 1025 | | | | 1030 | | | | 1035 | | | | | | | | | | | |
| 3408 | | | | | | | | | | | | | | | | | | | | |
| 3409 | ACG | TGT | GTT | GAT | GGC | CTG | GGT | ACC | TAC | CGC | TGC | AGC | TGC | CCC | CTG | GGC | 3168 | | | |
| 3410 | Thr | Cys | Val | Asp | Gly | Leu | Gly | Thr | Tyr | Arg | Cys | Ser | Cys | Pro | Leu | Gly | | | | |
| 3411 | 1040 | | | | 1045 | | | | 1050 | | | | | | | | | | | |
| 3412 | | | | | | | | | | | | | | | | | | | | |
| 3413 | TAC | ACT | GGG | AAA | AAC | TGT | CAG | ACC | CTG | GTG | AAT | CTC | TGC | AGT | CGG | TCT | 3216 | | | |
| 3414 | Tyr | Thr | Gly | Lys | Asn | Cys | Gln | Thr | Leu | Val | Asn | Leu | Cys | Ser | Arg | Ser | | | | |
| 3415 | 1055 | | | | 1060 | | | | 1065 | | | | | | | | | | | |
| 3416 | | | | | | | | | | | | | | | | | | | | |
| 3417 | CCA | TGT | AAA | AAC | AAA | GGT | ACT | TGT | GTT | CAG | AAA | AAA | GCA | GAG | TCC | CAG | 3264 | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:15:04

INPUT SET: S7068.raw

| | | |
|------|---|------|
| 3418 | Pro Cys Lys Asn Lys Gly Thr Cys Val Gln Lys Lys Ala Glu Ser Gln | |
| 3419 | 1070 1075 1080 1085 | |
| 3420 | | |
| 3421 | TGC CTA TGT CCA TCT GGA TGG GCT GGT GCC TAT TGT GAC GTG CCC AAT | 3312 |
| 3422 | Cys Leu Cys Pro Ser Gly Trp Ala Gly Ala Tyr Cys Asp Val Pro Asn | |
| 3423 | 1090 1095 1100 | |
| 3424 | | |
| 3425 | GTC TCT TGT GAC ATA GCA GCC TCC AGG AGA GGT GTG CTT GTT GAA CAC | 3360 |
| 3426 | Val Ser Cys Asp Ile Ala Ala Ser Arg Arg Gly Val Leu Val Glu His | |
| 3427 | 1105 1110 1115 | |
| 3428 | | |
| 3429 | TTG TGC CAG CAC TCA GGT GTC TGC ATC AAT GCT GGC AAC ACG CAT TAC | 3408 |
| 3430 | Leu Cys Gln His Ser Gly Val Cys Ile Asn Ala Gly Asn Thr His Tyr | |
| 3431 | 1120 1125 1130 | |
| 3432 | | |
| 3433 | TGT CAG TGC CCC CTG GGC TAT ACT GGG AGC TAC TGT GAG GAG CAA CTC | 3456 |
| 3434 | Cys Gln Cys Pro Leu Gly Tyr Thr Gly Ser Tyr Cys Glu Glu Gln Leu | |
| 3435 | 1135 1140 1145 | |
| 3436 | | |
| 3437 | GAT GAG TGT GCG TCC AAC CCC TGC CAG CAC GGG GCA ACA TGC AGT GAC | 3504 |
| 3438 | Asp Glu Cys Ala Ser Asn Pro Cys Gln His Gly Ala Thr Cys Ser Asp | |
| 3439 | 1150 1155 1160 1165 | |
| 3440 | | |
| 3441 | TTC ATT GGT GGA TAC AGA TGC GAG TGT GTC CCA GGC TAT CAG GGT GTC | 3552 |
| 3442 | Phe Ile Gly Gly Tyr Arg Cys Glu Cys Val Pro Gly Tyr Gln Gly Val | |
| 3443 | 1170 1175 1180 | |
| 3444 | | |
| 3445 | AAC TGT GAG TAT GAA GTG GAT GAG TGC CAG AAT CAG CCC TGC CAG AAT | 3600 |
| 3446 | Asn Cys Glu Tyr Glu Val Asp Glu Cys Gln Asn Gln Pro Cys Gln Asn | |
| 3447 | 1185 1190 1195 | |
| 3448 | | |
| 3449 | GGA GGC ACC TGT ATT GAC CTT GTG AAC CAT TTC AAG TGC TCT TGC CCA | 3648 |
| 3450 | Gly Gly Thr Cys Ile Asp Leu Val Asn His Phe Lys Cys Ser Cys Pro | |
| 3451 | 1200 1205 1210 | |
| 3452 | | |
| 3453 | CCA GGC ACT CGG GGC CTA CTC TGT GAA GAG AAC ATT GAT GAC TGT GCC | 3696 |
| 3454 | Pro Gly Thr Arg Gly Leu Leu Cys Glu Glu Asn Ile Asp Asp Cys Ala | |
| 3455 | 1215 1220 1225 | |
| 3456 | | |
| 3457 | CGG GGT CCC CAT TGC CTT AAT GGT GGT CAG TGC ATG GAT AGG ATT GGA | 3744 |
| 3458 | Arg Gly Pro His Cys Leu Asn Gly Gly Gln Cys Met Asp Arg Ile Gly | |
| 3459 | 1230 1235 1240 1245 | |
| 3460 | | |
| 3461 | GGC TAC AGT TGT CGC TGC TTG CCT GGC TTT GCT GGG GAG CGT TGT GAG | 3792 |
| 3462 | Gly Tyr Ser Cys Arg Cys Leu Pro Gly Phe Ala Gly Glu Arg Cys Glu | |
| 3463 | 1250 1255 1260 | |
| 3464 | | |
| 3465 | GGA GAC ATC AAC GAG TGC CTC TCC AAC CCC TGC AGC TCT GAG GGC AGC | 3840 |
| 3466 | Gly Asp Ile Asn Glu Cys Leu Ser Asn Pro Cys Ser Ser Glu Gly Ser | |
| 3467 | 1265 1270 1275 | |
| 3468 | | |

RAW SEQUENCE LISTING PATENT APPLICATION *US/08/083,590*

DATE: 12/16/93
TIME: 13:15:10

INPUT SET: S7068.raw

| | | |
|------|---|------|
| 3469 | CTG GAC TGT ATA CAG CTC ACC AAT GAC TAC CTG TGT GTT TGC CGT AGT | 3888 |
| 3470 | Leu Asp Cys Ile Gln Leu Thr Asn Asp Tyr Leu Cys Val Cys Arg Ser | |
| 3471 | 1280 1285 1290 | |
| 3472 | | |
| 3473 | GCC TTT ACT GGC CGG CAC TGT GAA ACC TTC GTC GAT GTG TGT CCC CAG | 3936 |
| 3474 | Ala Phe Thr Gly Arg His Cys Glu Thr Phe Val Asp Val Cys Pro Gln | |
| 3475 | 1295 1300 1305 | |
| 3476 | | |
| 3477 | ATG CCC TGC CTG AAT GGA GGG ACT TGT GCT GTG GCC AGT AAC ATG CCT | 3984 |
| 3478 | Met Pro Cys Leu Asn Gly Gly Thr Cys Ala Val Ala Ser Asn Met Pro | |
| 3479 | 1310 1315 1320 1325 | |
| 3480 | | |
| 3481 | GAT GGT TTC ATT TGC CGT TGT CCC CCG GGA TTT TCC GGG GCA AGG TGC | 4032 |
| 3482 | Asp Gly Phe Ile Cys Arg Cys Pro Pro Gly Phe Ser Gly Ala Arg Cys | |
| 3483 | 1330 1335 1340 | |
| 3484 | | |
| 3485 | CAG AGC AGC TGT GGA CAA GTG AAA TGT AGG AAG GGG GAG CAG TGT GTG | 4080 |
| 3486 | Gln Ser Ser Cys Gly Gln Val Lys Cys Arg Lys Gly Glu Gln Cys Val | |
| 3487 | 1345 1350 1355 | |
| 3488 | | |
| 3489 | CAC ACC GCC TCT GGA CCC CGC TGC TTC TGC CCC AGT CCC CGG GAC TGC | 4128 |
| 3490 | His Thr Ala Ser Gly Pro Arg Cys Phe Cys Pro Ser Pro Arg Asp Cys | |
| 3491 | 1360 1365 1370 | |
| 3492 | | |
| 3493 | GAG TCA GGC TGT GCC AGT AGC CCC TGC CAG CAC GGG GGC AGC TGC CAC | 4176 |
| 3494 | Glu Ser Gly Cys Ala Ser Ser Pro Cys Gln His Gly Gly Ser Cys His | |
| 3495 | 1375 1380 1385 | |
| 3496 | | |
| 3497 | CCT CAG CGC CAG CCT CCT TAT TAC TCC TGC CAG TGT GCC CCA CCA TTC | 4224 |
| 3498 | Pro Gln Arg Gln Pro Pro Tyr Tyr Ser Cys Gln Cys Ala Pro Pro Phe | |
| 3499 | 1390 1395 1400 1405 | |
| 3500 | | |
| 3501 | TCG GGT AGC CGC TGT GAA CTC TAC ACG GCA CCC CCC AGC ACC CCT CCT | 4272 |
| 3502 | Ser Gly Ser Arg Cys Glu Leu Tyr Thr Ala Pro Pro Ser Thr Pro Pro | |
| 3503 | 1410 1415 1420 | |
| 3504 | | |
| 3505 | GCC ACC TGT CTG AGC CAG TAT TGT GCC GAC AAA GCT CGG GAT GGC GTC | 4320 |
| 3506 | Ala Thr Cys Leu Ser Gln Tyr Cys Ala Asp Lys Ala Arg Asp Gly Val | |
| 3507 | 1425 1430 1435 | |
| 3508 | | |
| 3509 | TGT GAT GAG GCC TGC AAC AGC CAT GCC TGC CAG TGG GAT GGG GGT GAC | 4368 |
| 3510 | Cys Asp Glu Ala Cys Asn Ser His Ala Cys Gln Trp Asp Gly Gly Asp | |
| 3511 | 1440 1445 1450 | |
| 3512 | | |
| 3513 | TGT TCT CTC ACC ATG GAG AAC CCC TGG GCC AAC TGC TCC TCC CCA CTT | 4416 |
| 3514 | Cys Ser Leu Thr Met Glu Asn Pro Trp Ala Asn Cys Ser Ser Pro Leu | |
| 3515 | 1455 1460 1465 | |
| 3516 | | |
| 3517 | CCC TGC TGG GAT TAT ATC AAC AAC CAG TGT GAT GAG CTG TGC AAC ACG | 4464 |
| 3518 | Pro Cys Trp Asp Tyr Ile Asn Asn Gln Cys Asp Glu Leu Cys Asn Thr | |
| 3519 | 1470 1475 1480 1485 | |

INPUT SET: S7068.raw

| | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|-----|------|------|------|-------|------|--|------|
| 3520 | | | | | | | | | | | | | | | | | | |
| 3521 | GTC | GAG | TGC | CTG | TTT | GAC | AAC | TTT | GAA | TGC | CAG | GGG | AAC | AGC | AAG | ACA | | 4512 |
| 3522 | Val | Glu | Cys | Leu | Phe | Asp | Asn | Phe | Glu | Cys | Gln | Gly | Asn | Ser | Lys | Thr | | |
| 3523 | | | | | 1490 | | | | | 1495 | | | | | 1500 | | | |
| 3524 | | | | | | | | | | | | | | | | | | |
| 3525 | TGC | AAG | TAT | GAC | AAA | TAC | TGT | GCA | GAC | CAC | TTC | AAA | GAC | AAC | CAC | TGT | | 4560 |
| 3526 | Cys | Lys | Tyr | Asp | Lys | Tyr | Cys | Ala | Asp | His | Phe | Lys | Asp | Asn | His | Cys | | |
| 3527 | | | | 1505 | | | | 1510 | | | | | 1515 | | | | | |
| 3528 | | | | | | | | | | | | | | | | | | |
| 3529 | AAC | CAG | GGG | TGC | AAC | AGT | GAG | GAG | TGT | GGT | TGG | GAT | GGG | CTG | GAC | TGT | | 4608 |
| 3530 | Asn | Gln | Gly | Cys | Asn | Ser | Glu | Glu | Cys | Gly | Trp | Asp | Gly | Leu | Asp | Cys | | |
| 3531 | | | 1520 | | | | | 1525 | | | | | 1530 | | | | | |
| 3532 | | | | | | | | | | | | | | | | | | |
| 3533 | GCT | GCT | GAC | CAA | CCT | GAG | AAC | CTG | GCA | GAA | GGT | ACC | CTG | GTT | ATT | GTG | | 4656 |
| 3534 | Ala | Ala | Asp | Gln | Pro | Glu | Asn | Leu | Ala | Glu | Gly | Thr | Leu | Val | Ile | Val | | |
| 3535 | | 1535 | | | | | 1540 | | | | | 1545 | | | | | | |
| 3536 | | | | | | | | | | | | | | | | | | |
| 3537 | GTA | TTG | ATG | CCA | CCT | GAA | CAA | CTG | CTC | CAG | GAT | GCT | CGC | AGC | TTC | TTG | | 4704 |
| 3538 | Val | Leu | Met | Pro | Pro | Glu | Gln | Leu | Leu | Gln | Asp | Ala | Arg | Ser | Phe | Leu | | |
| 3539 | 1550 | | | | | 1555 | | | | 1560 | | | | | | 1565 | | |
| 3540 | | | | | | | | | | | | | | | | | | |
| 3541 | CGG | GCA | CTG | GGT | ACC | CTG | CTC | CAC | ACC | AAC | CTG | CGC | ATT | AAG | CGG | GAC | | 4752 |
| 3542 | Arg | Ala | Leu | Gly | Thr | Leu | Leu | His | Thr | Asn | Leu | Arg | Ile | Lys | Arg | Asp | | |
| 3543 | | | | | 1570 | | | | | 1575 | | | | | 1580 | | | |
| 3544 | | | | | | | | | | | | | | | | | | |
| 3545 | TCC | CAG | GGG | GAA | CTC | ATG | GTG | TAC | CCC | TAT | TAT | GGT | GAG | AAG | TCA | GCT | | 4800 |
| 3546 | Ser | Gln | Gly | Glu | Leu | Met | Val | Tyr | Pro | Tyr | Tyr | Gly | Glu | Lys | Ser | Ala | | |
| 3547 | | | | 1585 | | | | | 1590 | | | | | 1595 | | | | |
| 3548 | | | | | | | | | | | | | | | | | | |
| 3549 | GCT | ATG | AAG | AAA | CAG | AGG | ATG | ACA | CGC | AGA | TCC | CTT | CCT | GGT | GAA | CAA | | 4848 |
| 3550 | Ala | Met | Lys | Lys | Gln | Arg | Met | Thr | Arg | Arg | Ser | Leu | Pro | Gly | Glu | Gln | | |
| 3551 | | | 1600 | | | | | 1605 | | | | | 1610 | | | | | |
| 3552 | | | | | | | | | | | | | | | | | | |
| 3553 | GAA | CAG | GAG | GTG | GCT | GGC | TCT | AAA | GTC | TTT | CTG | GAA | ATT | GAC | AAC | CGC | | 4896 |
| 3554 | Glu | Gln | Glu | Val | Ala | Gly | Ser | Lys | Val | Phe | Leu | Glu | Ile | Asp | Asn | Arg | | |
| 3555 | | 1615 | | | | | 1620 | | | | | 1625 | | | | | | |
| 3556 | | | | | | | | | | | | | | | | | | |
| 3557 | CAG | TGT | GTT | CAA | GAC | TCA | GAC | CAC | TGC | TTC | AAG | AAC | ACG | GAT | GCA</ | | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:15:24

INPUT SET: S7068.raw

| | | | | |
|------|---|------|------|------|
| 3571 | 1680 | 1685 | 1690 | |
| 3572 | | | | |
| 3573 | CTG GGG GTA ATC ATG GCA AAA CGA AAG CGT AAG CAT GGC TCT CTC TGG | | | 5136 |
| 3574 | Leu Gly Val Ile Met Ala Lys Arg Lys Arg Lys His Gly Ser Leu Trp | | | |
| 3575 | 1695 | 1700 | 1705 | |
| 3576 | | | | |
| 3577 | CTG CCT GAA GGT TTC ACT CTT CGC CGA GAT GCA AGC AAT CAC AAG CGT | | | 5184 |
| 3578 | Leu Pro Glu Gly Phe Thr Leu Arg Arg Asp Ala Ser Asn His Lys Arg | | | |
| 3579 | 1710 | 1715 | 1720 | 1725 |
| 3580 | | | | |
| 3581 | CGT GAG CCA GTG GGA CAG GAT GCT GTG GGG CTG AAA AAT CTC TCA GTG | | | 5232 |
| 3582 | Arg Glu Pro Val Gly Gln Asp Ala Val Gly Leu Lys Asn Leu Ser Val | | | |
| 3583 | 1730 | 1735 | 1740 | |
| 3584 | | | | |
| 3585 | CAA GTC TCA GAA GCT AAC CTA ATT GGT ACT GGA ACA AGT GAA CAC TGG | | | 5280 |
| 3586 | Gln Val Ser Glu Ala Asn Leu Ile Gly Thr Gly Thr Ser Glu His Trp | | | |
| 3587 | 1745 | 1750 | 1755 | |
| 3588 | | | | |
| 3589 | GTC GAT GAT GAA GGG CCC CAG CCA AAG AAA GTA AAG GCT GAA GAT GAG | | | 5328 |
| 3590 | Val Asp Asp Glu Gly Pro Gln Pro Lys Lys Val Lys Ala Glu Asp Glu | | | |
| 3591 | 1760 | 1765 | 1770 | |
| 3592 | | | | |
| 3593 | GCC TTA CTC TCA GAA GAA GAT GAC CCC ATT GAT CGA CGG CCA TGG ACA | | | 5376 |
| 3594 | Ala Leu Leu Ser Glu Glu Asp Asp Pro Ile Asp Arg Arg Pro Trp Thr | | | |
| 3595 | 1775 | 1780 | 1785 | |
| 3596 | | | | |
| 3597 | CAG CAG CAC CTT GAA GCT GCA GAC ATC CGT AGG ACA CCA TCG CTG GCT | | | 5424 |
| 3598 | Gln Gln His Leu Glu Ala Ala Asp Ile Arg Arg Thr Pro Ser Leu Ala | | | |
| 3599 | 1790 | 1795 | 1800 | 1805 |
| 3600 | | | | |
| 3601 | CTC ACC CCT CCT CAG GCA GAG CAG GAG GTG GAT GTG TTA GAT GTG AAT | | | 5472 |
| 3602 | Leu Thr Pro Pro Gln Ala Glu Gln Glu Val Asp Val Leu Asp Val Asn | | | |
| 3603 | 1810 | 1815 | 1820 | |
| 3604 | | | | |
| 3605 | GTC CGT GGC CCA GAT GGC TGC ACC CCA TTG ATG TTG GCT TCT CTC CGA | | | 5520 |
| 3606 | Val Arg Gly Pro Asp Gly Cys Thr Pro Leu Met Leu Ala Ser Leu Arg | | | |
| 3607 | 1825 | 1830 | 1835 | |
| 3608 | | | | |
| 3609 | GGA GGC AGC TCA GAT TTG AGT GAT GAA GAT GAA GAT GCA GAG GAC TCT | | | 5568 |
| 3610 | Gly Gly Ser Ser Asp Leu Ser Asp Glu Asp Glu Asp Ala Glu Asp Ser | | | |
| 3611 | 1840 | 1845 | 1850 | |
| 3612 | | | | |
| 3613 | TCT GCT AAC ATC ATC ACA GAC TTG GTC TAC CAG GGT GCC AGC CTC CAG | | | 5616 |
| 3614 | Ser Ala Asn Ile Ile Thr Asp Leu Val Tyr Gln Gly Ala Ser Leu Gln | | | |
| 3615 | 1855 | 1860 | 1865 | |
| 3616 | | | | |
| 3617 | GCC CAG ACA GAC CGG ACT GGT GAG ATG GCC CTG CAC CTT GCA GCC CGC | | | 5664 |
| 3618 | Ala Gln Thr Asp Arg Thr Gly Glu Met Ala Leu His Leu Ala Ala Arg | | | |
| 3619 | 1870 | 1875 | 1880 | 1885 |
| 3620 | | | | |
| 3621 | TAC TCA CGG GCT GAT GCT GCC AAG CGT CTC CTG GAT GCA GGT GCA GAT | | | 5712 |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:15:31

INPUT SET: S7068.raw

| | | |
|------|---|------|
| 3622 | Tyr Ser Arg Ala Asp Ala Ala Lys Arg Leu Leu Asp Ala Gly Ala Asp | |
| 3623 | 1890 1895 1900 | |
| 3624 | | |
| 3625 | GCC AAT GCC CAG GAC AAC ATG GGC CGC TGT CCA CTC CAT GCT GCA GTG | 5760 |
| 3626 | Ala Asn Ala Gln Asp Asn Met Gly Arg Cys Pro Leu His Ala Ala Val | |
| 3627 | 1905 1910 1915 | |
| 3628 | | |
| 3629 | GCA GCT GAT GCC CAA GGT GTC TTC CAG ATT CTG ATT CGC AAC CGA GTA | 5808 |
| 3630 | Ala Ala Asp Ala Gln Gly Val Phe Gln Ile Leu Ile Arg Asn Arg Val | |
| 3631 | 1920 1925 1930 | |
| 3632 | | |
| 3633 | ACT GAT CTA GAT GCC AGG ATG AAT GAT GGT ACT ACA CCC CTG ATC CTG | 5856 |
| 3634 | Thr Asp Leu Asp Ala Arg Met Asn Asp Gly Thr Thr Pro Leu Ile Leu | |
| 3635 | 1935 1940 1945 | |
| 3636 | | |
| 3637 | GCT GCC CGC CTG GCT GTG GAG GGA ATG GTG GCA GAA CTG ATC AAC TGC | 5904 |
| 3638 | Ala Ala Arg Leu Ala Val Glu Gly Met Val Ala Glu Leu Ile Asn Cys | |
| 3639 | 1950 1955 1960 1965 | |
| 3640 | | |
| 3641 | CAA GCG GAT GTG AAT GCA GTG GAT GAC CAT GGA AAA TCT GCT CTT CAC | 5952 |
| 3642 | Gln Ala Asp Val Asn Ala Val Asp Asp His Gly Lys Ser Ala Leu His | |
| 3643 | 1970 1975 1980 | |
| 3644 | | |
| 3645 | TGG GCA GCT GCT GTC AAT AAT GTG GAG GCA ACT CTT TTG TTG TTG AAA | 6000 |
| 3646 | Trp Ala Ala Ala Val Asn Asn Val Glu Ala Thr Leu Leu Leu Leu Lys | |
| 3647 | 1985 1990 1995 | |
| 3648 | | |
| 3649 | AAT GGG GCC AAC CGA GAC ATG CAG GAC AAC AAG GAA GAG ACA CCT CTG | 6048 |
| 3650 | Asn Gly Ala Asn Arg Asp Met Gln Asp Asn Lys Glu Glu Thr Pro Leu | |
| 3651 | 2000 2005 2010 | |
| 3652 | | |
| 3653 | TTT CTT GCT GCC CGG GAG GGG AGC TAT GAA GCA GCC AAG ATC CTG TTA | 6096 |
| 3654 | Phe Leu Ala Ala Arg Glu Gly Ser Tyr Glu Ala Ala Lys Ile Leu Leu | |
| 3655 | 2015 2020 2025 | |
| 3656 | | |
| 3657 | GAC CAT TTT GCC AAT CGA GAC ATC ACA GAC CAT ATG GAT CGT CTT CCC | 6144 |
| 3658 | Asp His Phe Ala Asn Arg Asp Ile Thr Asp His Met Asp Arg Leu Pro | |
| 3659 | 2030 2035 2040 2045 | |
| 3660 | | |
| 3661 | CGG GAT GTG GCT CGG GAT CGC ATG CAC CAT GAC ATT GTG CGC CTT CTG | 6192 |
| 3662 | Arg Asp Val Ala Arg Asp Arg Met His His Asp Ile Val Arg Leu Leu | |
| 3663 | 2050 2055 2060 | |
| 3664 | | |
| 3665 | GAT GAA TAC AAT GTG ACC CCA AGC CCT CCA GGC ACC GTG TTG ACT TCT | 6240 |
| 3666 | Asp Glu Tyr Asn Val Thr Pro Ser Pro Pro Gly Thr Val Leu Thr Ser | |
| 3667 | 2065 2070 2075 | |
| 3668 | | |
| 3669 | GCT CTC TCA CCT GTC ATC TGT GGG CCC AAC AGA TCT TTC CTC AGC CTG | 6288 |
| 3670 | Ala Leu Ser Pro Val Ile Cys Gly Pro Asn Arg Ser Phe Leu Ser Leu | |
| 3671 | 2080 2085 2090 | |
| 3672 | | |

RAW SEQUENCE LISTING PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:15:38

INPUT SET: S7068.raw

| | | |
|------|---|------|
| 3673 | AAG CAC ACC CCA ATG GGC AAG AAG TCT AGA CGG CCC AGT GCC AAG AGT | 6336 |
| 3674 | Lys His Thr Pro Met Gly Lys Lys Ser Arg Arg Pro Ser Ala Lys Ser | |
| 3675 | 2095 2100 2105 | |
| 3676 | | |
| 3677 | ACC ATG CCT ACT AGC CTC CCT AAC CTT GCC AAG GAG GCA AAG GAT GCC | 6384 |
| 3678 | Thr Met Pro Thr Ser Leu Pro Asn Leu Ala Lys Glu Ala Lys Asp Ala | |
| 3679 | 2110 2115 2120 2125 | |
| 3680 | | |
| 3681 | AAG GGT AGT AGG AGG AAG AAG TCT CTG AGT GAG AAG GTC CAA CTG TCT | 6432 |
| 3682 | Lys Gly Ser Arg Arg Lys Lys Ser Leu Ser Glu Lys Val Gln Leu Ser | |
| 3683 | 2130 2135 2140 | |
| 3684 | | |
| 3685 | GAG AGT TCA GTA ACT TTA TCC CCT GTT GAT TCC CTA GAA TCT CCT CAC | 6480 |
| 3686 | Glu Ser Ser Val Thr Leu Ser Pro Val Asp Ser Leu Glu Ser Pro His | |
| 3687 | 2145 2150 2155 | |
| 3688 | | |
| 3689 | ACG TAT GTT TCC GAC ACC ACA TCC TCT CCA ATG ATT ACA TCC CCT GGG | 6528 |
| 3690 | Thr Tyr Val Ser Asp Thr Thr Ser Ser Pro Met Ile Thr Ser Pro Gly | |
| 3691 | 2160 2165 2170 | |
| 3692 | | |
| 3693 | ATC TTA CAG GCC TCA CCC AAC CCT ATG TTG GCC ACT GCC GCC CCT CCT | 6576 |
| 3694 | Ile Leu Gln Ala Ser Pro Asn Pro Met Leu Ala Thr Ala Pro Pro | |
| 3695 | 2175 2180 2185 | |
| 3696 | | |
| 3697 | GCC CCA GTC CAT GCC CAG CAT GCA CTA TCT TTT TCT AAC CTT CAT GAA | 6624 |
| 3698 | Ala Pro Val His Ala Gln His Ala Leu Ser Phe Ser Asn Leu His Glu | |
| 3699 | 2190 2195 2200 2205 | |
| 3700 | | |
| 3701 | ATG CAG CCT TTG GCA CAT GGG GCC AGC ACT GTG CTT CCC TCA GTG AGC | 6672 |
| 3702 | Met Gln Pro Leu Ala His Gly Ala Ser Thr Val Leu Pro Ser Val Ser | |
| 3703 | 2210 2215 2220 | |
| 3704 | | |
| 3705 | CAG TTG CTA TCC CAC CAC CAC ATT GTG TCT CCA GGC AGT GGC AGT GCT | 6720 |
| 3706 | Gln Leu Leu Ser His His His Ile Val Ser Pro Gly Ser Gly Ser Ala | |
| 3707 | 2225 2230 2235 | |
| 3708 | | |
| 3709 | GGA AGC TTG AGT AGG CTC CAT CCA GTC CCA GTC CCA GCA GAT TGG ATG | 6768 |
| 3710 | Gly Ser Leu Ser Arg Leu His Pro Val Pro Val Pro Ala Asp Trp Met | |
| 3711 | 2240 2245 2250 | |
| 3712 | | |
| 3713 | AAC CGC ATG GAG GTG AAT GAG ACC CAG TAC AAT GAG ATG TTT GGT ATG | 6816 |
| 3714 | Asn Arg Met Glu Val Asn Glu Thr Gln Tyr Asn Glu Met Phe Gly Met | |
| 3715 | 2255 2260 2265 | |
| 3716 | | |
| 3717 | GTC CTG GCT CCA GCT GAG GGC ACC CAT CCT GGC ATA GCT CCC CAG AGC | 6864 |
| 3718 | Val Leu Ala Pro Ala Glu Gly Thr His Pro Gly Ile Ala Pro Gln Ser | |
| 3719 | 2270 2275 2280 2285 | |
| 3720 | | |
| 3721 | AGG CCA CCT GAA GGG AAG CAC ATA ACC ACC CCT CGG GAG CCC TTG CCC | 6912 |
| 3722 | Arg Pro Pro Glu Gly Lys His Ile Thr Thr Pro Arg Glu Pro Leu Pro | |
| 3723 | 2290 2295 2300 | |

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| 3724 | | | | | | | | | | | | | | | | | |
| 3725 | CCC | ATT | GTG | ACT | TTC | CAG | CTC | ATC | CCT | AAA | GGC | AGT | ATT | GCC | CAA | CCA | 6960 |
| 3726 | Pro | Ile | Val | Thr | Phe | Gln | Leu | Ile | Pro | Lys | Gly | Ser | Ile | Ala | Gln | Pro | |
| 3727 | | | | 2305 | | | | | 2310 | | | | | 2315 | | | |
| 3728 | | | | | | | | | | | | | | | | | |
| 3729 | GCG | GGG | GCT | CCC | CAG | CCT | CAG | TCC | ACC | TGC | CCT | CCA | GCT | GTT | GCG | GGC | 7008 |
| 3730 | Ala | Gly | Ala | Pro | Gln | Pro | Gln | Ser | Thr | Cys | Pro | Pro | Ala | Val | Ala | Gly | |
| 3731 | | | 2320 | | | | | 2325 | | | | | 2330 | | | | |
| 3732 | | | | | | | | | | | | | | | | | |
| 3733 | CCC | CTG | CCC | ACC | ATG | TAC | CAG | ATT | CCA | GAA | ATG | GCC | CGT | TTG | CCC | AGT | 7056 |
| 3734 | Pro | Leu | Pro | Thr | Met | Tyr | Gln | Ile | Pro | Glu | Met | Ala | Arg | Leu | Pro | Ser | |
| 3735 | | 2335 | | | | | 2340 | | | | | 2345 | | | | | |
| 3736 | | | | | | | | | | | | | | | | | |
| 3737 | GTG | GCT | TTC | CCC | ACT | GCC | ATG | ATG | CCC | CAG | CAG | GAC | GGG | CAG | GTA | GCT | 7104 |
| 3738 | Val | Ala | Phe | Pro | Thr | Ala | Met | Met | Pro | Gln | Gln | Asp | Gly | Gln | Val | Ala | |
| 3739 | 2350 | | | | | 2355 | | | | | 2360 | | | | | 2365 | |
| 3740 | | | | | | | | | | | | | | | | | |
| 3741 | CAG | ACC | ATT | CTC | CCA | GCC | TAT | CAT | CCT | TTC | CCA | GCC | TCT | GTG | GGC | AAG | 7152 |
| 3742 | Gln | Thr | Ile | Leu | Pro | Ala | Tyr | His | Pro | Phe | Pro | Ala | Ser | Val | Gly | Lys | |
| 3743 | | | | | 2370 | | | | | 2375 | | | | | 2380 | | |
| 3744 | | | | | | | | | | | | | | | | | |
| 3745 | TAC | CCC | ACA | CCC | CCT | TCA | CAG | CAC | AGT | TAT | GCT | TCC | TCA | AAT | GCT | GCT | 7200 |
| 3746 | Tyr | Pro | Thr | Pro | Pro | Ser | Gln | His | Ser | Tyr | Ala | Ser | Ser | Asn | Ala | Ala | |
| 3747 | | | | 2385 | | | | | 2390 | | | | | 2395 | | | |
| 3748 | | | | | | | | | | | | | | | | | |
| 3749 | GAG | CGA | ACA | CCC | AGT | CAC | AGT | GGT | CAC | CTC | CAG | GGT | GAG | CAT | CCC | TAC | 7248 |
| 3750 | Glu | Arg | Thr | Pro | Ser | His | Ser | Gly | His | Leu | Gln | Gly | Glu | His | Pro | Tyr | |
| 3751 | | | 2400 | | | | | 2405 | | | | | 2410 | | | | |
| 3752 | | | | | | | | | | | | | | | | | |
| 3753 | CTG | ACA | CCA | TCC | CCA | GAG | TCT | CCT | GAC | CAG | TGG | TCA | AGT | TCA | TCA | CCC | 7296 |
| 3754 | Leu | Thr | Pro | Ser | Pro | Glu | Ser | Pro | Asp | Gln | Trp | Ser | Ser | Ser | Ser | Pro | |
| 3755 | | 2415 | | | | | 2420 | | | | | 2425 | | | | | |
| 3756 | | | | | | | | | | | | | | | | | |
| 3757 | CAC | TCT | GCT | TCT | GAC | TGG | TCA | GAT | GTG | ACC | ACC | AGC | CCT | ACC | CCT | GGG | 7344 |
| 3758 | His | Ser | Ala | Ser | Asp | Trp | Ser | Asp | Val | Thr | Thr | Ser | Pro | Thr | Pro | Gly | |
| 3759 | 2430 | | | | | 2435 | | | | | 2440 | | | | | 2445 | |
| 3760 | | | | | | | | | | | | | | | | | |
| 3761 | GGT | GCT | GGA | GGA | GGT | CAG | CGG | GGA | CCT | GGG | ACA | CAC | ATG | TCT | GAG | CCA | 7392 |
| 3762 | Gly | Ala | Gly | Gly | Gly | Gln | Arg | Gly | Pro | Gly | Thr | His | Met | Ser | Glu | Pro | |
| 3763 | | | | 2450 | | | | | | 2455 | | | | | 2460 | | |
| 376 | | | | | | | | | | | | | | | | | |

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TIME: 13:15:51

INPUT SET: S7068.raw

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| 3775 | ATTCTAATCT | AATAAGACAA | GTTTGTGGAA | ATGCAAGATG | AATACAAGCC | TTGGGTCCAT | 7679 |
| 3776 | | | | | | | |
| 3777 | GTTTACTCTC | TTCTATTTGG | AGAATAAGAT | GGATGCTTAT | TGAAGCCCAG | ACATTCTTGC | 7739 |
| 3778 | | | | | | | |
| 3779 | AGCTTGGACT | GCATTTTAAG | CCCTGCAGGC | TTCTGCCATA | TCCATGAGAA | GATTCTACAC | 7799 |
| 3780 | | | | | | | |
| 3781 | TAGCGTCCTG | TTGGGAATTA | TGCCCTGGAA | TTCTGCCTGA | ATTGACCTAC | GCATCTCCTC | 7859 |
| 3782 | | | | | | | |
| 3783 | CTCCTTGGAC | ATTCTTTTGT | CTTCATTTGG | TGCTTTTGGT | TTTGACCTC | TCCGTGATTG | 7919 |
| 3784 | | | | | | | |
| 3785 | TAGCCCTACC | AGCATGTTAT | AGGGCAAGAC | CTTTGTGCTT | TTGATCATTC | TGGCCCATGA | 7979 |
| 3786 | | | | | | | |
| 3787 | AAGCAACTTT | GGTCTCCTTT | CCCCTCCTGT | CTTCCCGGTA | TCCCTTGGAG | TCTCACAAGG | 8039 |
| 3788 | | | | | | | |
| 3789 | TTTACTTTGG | TATGGTTCTC | AGCACAAACC | TTTCAAGTAT | GTTGTTTCTT | TGGAAAATGG | 8099 |
| 3790 | | | | | | | |
| 3791 | ACATACTGTA | TTGTGTTCTC | CTGCATATAT | CATTCTTGGA | GAGAGAAGGG | GAGAAGAATA | 8159 |
| 3792 | | | | | | | |
| 3793 | CTTTTCTTCA | ACAAATTTTG | GGGGCAGGAG | ATCCCTTCAA | GAGGCTGCAC | CTTAATTTTTT | 8219 |
| 3794 | | | | | | | |
| 3795 | CTTGTCTGTG | TGCAGGTCTT | CATATAAACT | TTACCAGGAA | GAAGGGTGTG | AGTTTGTGTG | 8279 |
| 3796 | | | | | | | |
| 3797 | TTTTCTGTGT | ATGGGCCTGG | TCAGTGTAAG | GTTTTATCCT | TGATAGTCTA | GTTACTATGA | 8339 |
| 3798 | | | | | | | |
| 3799 | CCCTCCCCAC | TTTTTTTAAAA | CCAGAAAAAG | GTTTGGAATG | TTGGAATGAC | CAAGAGACAA | 8399 |
| 3800 | | | | | | | |
| 3801 | GTAACTCGT | GCAAGAGCCA | GTTACCCACC | CACAGGTCCC | CCTACTTCCT | GCCAAGCATT | 8459 |
| 3802 | | | | | | | |
| 3803 | CCATTGACTG | CCTGTATGGA | ACACATTTGT | CCCAGATCTG | AGCATTCTAG | GCCTGTTTCA | 8519 |
| 3804 | | | | | | | |
| 3805 | CTCACTCACC | CAGCATATGA | AACTAGTCTT | AACTGTTGAG | CCTTTCCTTT | CATATCCACA | 8579 |
| 3806 | | | | | | | |
| 3807 | GAAGACACTG | TCTCAAATGT | TGTACCCTTG | CCATTTAGGA | CTGAACTTTC | CTTAGCCCCA | 8639 |
| 3808 | | | | | | | |
| 3809 | GGGACCCAGT | GACAGTTGTC | TTCCGTTTGT | CAGATGATCA | GTCTCTACTG | ATTATCTTGC | 8699 |
| 3810 | | | | | | | |
| 3811 | TGCTTAAAGG | CCTGCTCACC | AATCTTTCTT | TCACACCGTG | TGGTCCGTGT | TACTGGTATA | 8759 |
| 3812 | | | | | | | |
| 3813 | CCCAGTATGT | TCTCACTGAA | GACATGGACT | TTATATGTTC | AAGTGCAGGA | ATTGGAAAGT | 8819 |
| 3814 | | | | | | | |
| 3815 | TGGACTTGTT | TTCTATGATC | CAAAACAGCC | CTATAAGAAG | GTTGGAAAAG | GAGGAACTAT | 8879 |
| 3816 | | | | | | | |
| 3817 | ATAGCAGCCT | TTGCTATTTT | CTGCTACCAT | TTCTTTTCCT | CTGAAGCGGC | CATGACATTC | 8939 |
| 3818 | | | | | | | |
| 3819 | CCTTTGGCAA | CTAACGTAGA | AACTCAACAG | AACATTTTCC | TTTCCTAGAG | TCACCTTTTA | 8999 |
| 3820 | | | | | | | |
| 3821 | GATGATAATG | GACAACTATA | GACTTGCTCA | TTGTTTCAGAC | TGATTGCCCC | TCACCTGAAT | 9059 |
| 3822 | | | | | | | |
| 3823 | CCACTCTCTG | TATTCATGCT | CTTGGCAATT | TCTTTGACTT | TCTTTTAAGG | GCAGAAGCAT | 9119 |
| 3824 | | | | | | | |
| 3825 | TTTAGTTAAT | TGTAGATAAA | GAATAGTTTT | CTTCTCTTTC | TCCTTGGGCC | AGTTAATAAT | 9179 |

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|------|------------|------------|-------------|------------|-------------|------------|------|
| 3826 | | | | | | | |
| 3827 | TGGTCCATGG | CTACACTGCA | ACTTCCGTCC | AGTGCTGTGA | TGCCCATGAC | ACCTGCAAAA | 9239 |
| 3828 | | | | | | | |
| 3829 | TAAGTTCTGC | CTGGGCATTT | TGTAGATATT | AACAGGTGAA | TTCCCGACTC | TTTTGGTTTG | 9299 |
| 3830 | | | | | | | |
| 3831 | AATGACAGTT | CTCATTCCTT | CTATGGCTGC | AAGTATGCAT | CAGTGCTTCC | CACTTACCTG | 9359 |
| 3832 | | | | | | | |
| 3833 | ATTTGTCTGT | CGGTGGCCCC | ATATGGAAAC | CCTGCGTGTC | TGTTGGCATA | ATAGTTTACA | 9419 |
| 3834 | | | | | | | |
| 3835 | AATGGTTTTT | TCAGTCCTAT | CCAAATTTAT | TGAACCAACA | AAAATAATTA | CTTCTGCCCT | 9479 |
| 3836 | | | | | | | |
| 3837 | GAGATAAGCA | GATTAAGTTT | GTTCAATTCTC | TGCTTTATTC | TCTCCATGTG | GCAACATTCT | 9539 |
| 3838 | | | | | | | |
| 3839 | GTCAGCCTCT | TTCATAGTGT | GCAAACATTT | TATCATTCTA | AATGGTGA CT | CTCTGCCCTT | 9599 |
| 3840 | | | | | | | |
| 3841 | GGACCCATTT | ATTATTCACA | GATGGGGAGA | ACCTATCTGC | ATGGACCCTC | ACCATCCTCT | 9659 |
| 3842 | | | | | | | |
| 3843 | GTGCAGCACA | CACAGTGCAG | GGAGCCAGTG | GCGATGGCGA | TGACTTTCTT | CCCCTGGGAA | 9719 |
| 3844 | | | | | | | |
| 3845 | TTCC | | | | | | 9723 |
| 3846 | | | | | | | |
| 3847 | | | | | | | |

PAGE: 1

SEQUENCE VERIFICATION REPORT
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TIME: 13:16:01

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PAGE: 1

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TIME: 13:16:02

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APPLICATION NUMBER
FILING DATE
PRIOR APPLICATION DATA

PAGE: 1

SEQUENCE CORRECTION REPORT
PATENT APPLICATION US/08/083,590

DATE: 12/16/93
TIME: 13:16:03

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